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S. B. & M. FLEISHER,  
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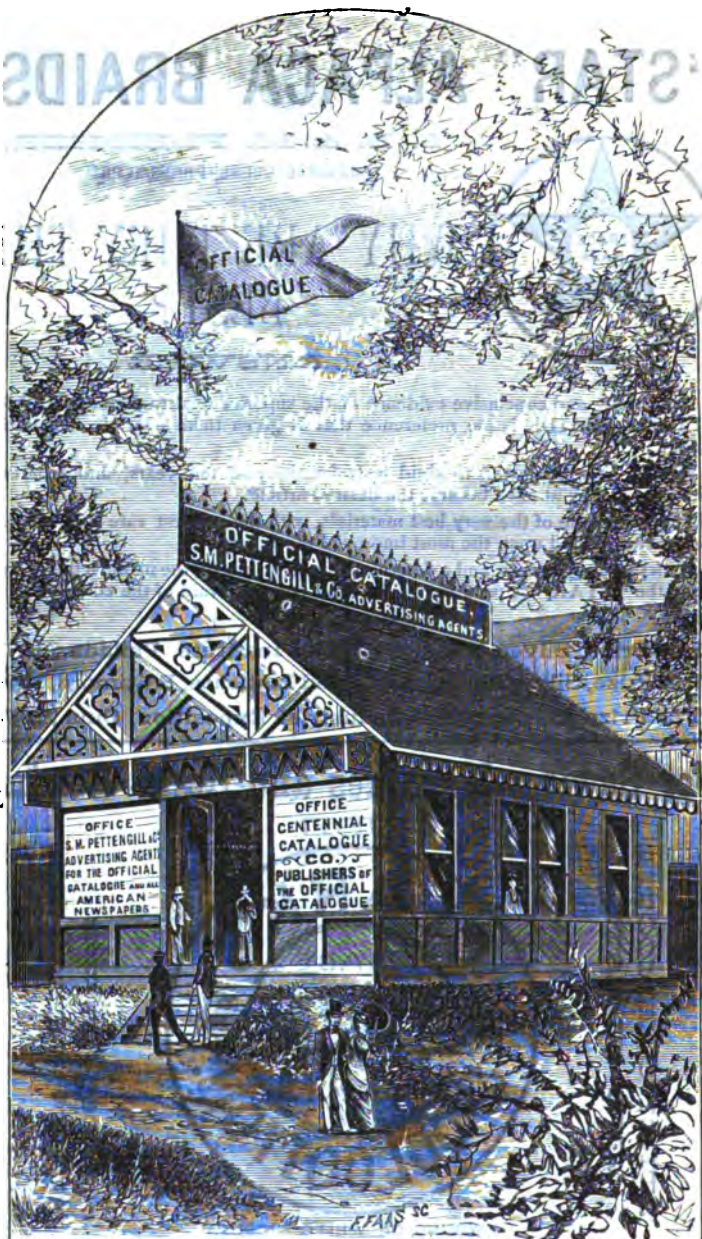
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OF THE

INTERNATIONAL EXHIBITION OF 1876.

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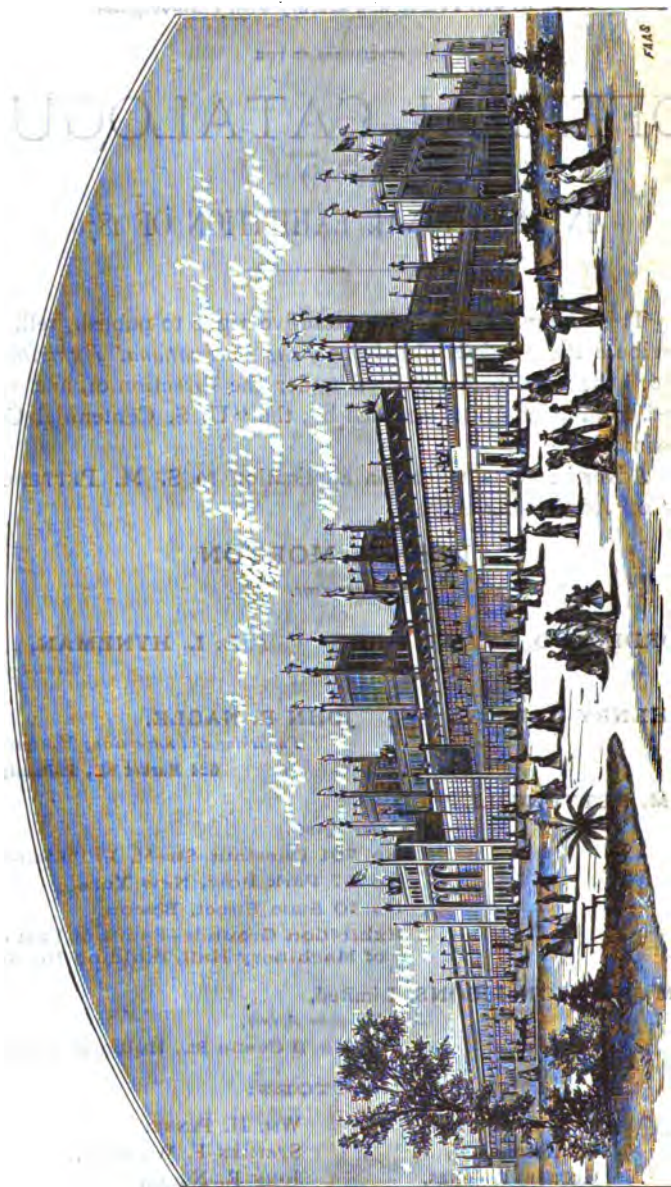
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United States Centennial Commission.

INTERNATIONAL EXHIBITION.

1876

Official Catalogue.

COMPLETE IN ONE VOLUME.

I. MAIN BUILDING.

II. DEPARTMENT OF ART.

III. DEPARTMENT OF MACHINERY.

IV. DEPARTMENTS OF AGRICULTURE AND  
HORTICULTURE.

*REVISED EDITION.*

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# THE INTERNATIONAL EXHIBITION OF 1876.

THE Congress of the United States, by an act approved March 3d, 1871, provided that the centennial anniversary of the promulgation of the Declaration of American Independence in Philadelphia should be celebrated in that city "by holding an International Exhibition of Arts, Manufactures, and Products of the Soil and Mine." The preparation of the Exhibition was, by the act, confided to the United States Centennial Commission, composed of a commissioner and alternate commissioner nominated by the governor of each State and Territory, and confirmed by the President of the United States. A subsequent act, approved June 1st, 1872, created the Centennial Board of Finance, charged with the financial conduct of the Exhibition.

A proclamation by the President of the United States, dated July 3d, 1873, announced the International Exhibition, and commended it to all nations. An act of Congress, approved June 5th, 1874, requested the President, in the name of the United States, to invite the governments of foreign nations to participate in the Exhibition. The invitation thus extended was accepted by the governments of

Argentine Republic,	Queensland,	Seychelles Archipelago,	Norway,
Austria-Hungary,	New Zealand,	Tasmania,	Orange Free State,
Belgium,	New South Wales,	Trinidad,	Peru,
Brazil,	Victoria,	India,	Philippine Islands,
Canada,	South Australia,	Bermuda, and	Portugal,
Chili,	India,	Jamaica,	Russia,
China,	Cape of Good Hope,	Hawaii,	Spain,
Denmark,	Bahamas,	Italy,	Sweden,
Egypt,	British Gulana,	Japan,	Switzerland,
France, with Algeria,	Ceylon,	Liberia,	Tunis,
Germany,	Straits Settlements,	Luxembourg,	Turkey,
Great Britain, with colonies, viz.	Gold Coast,	Mexico,	Venezuela.
	Mauritius,	Netherlands,	

The Centennial Commission provided for the classification of the objects to be exhibited in seven departments, which were referred to five exhibition buildings in this manner:

DEPARTMENT.	BUILDINGS.	ACRES COVERED.
I. Mining and Metallurgy,	Main Building,	21.47
II. Manufactures,		
III. Education and Science,		
IV. Art,	Art Gallery	1.5
V. Machinery,	Machinery Building,	14.
VI. Agriculture,	Agricultural Building,	10.
VII. Horticulture,	Horticultural Building,	1.5
Total, . . . . .		48.47

The applications for exhibiting space, however, both at home and from abroad, so exceeded the calculations that had been made as to necessitate the erection of annexes supplementing the capacity of each of these buildings. Enumerations of these additional structures will be found on subsequent pages. The classes of objects grouped in the several departments are indicated in the following synopsis of the classification of the Exhibition.

## SYNOPSIS OF THE CLASSIFICATION.

LOCATION.	DEPARTMENTS.	CLASSES.	GROUPS.
MAIN BUILDING.	I. MINING AND METALLURGY.	100—109 110—119 120—129	Minerals, Ores, Stone, Mining Products. Metallurgical Products. Mining Engineering.
	II. MANUFACTURES.	200—205 206—216 217—227 228—234 235—241 242—249 250—257 258—264 265—271 272—279 280—284 285—291 292—296	Chemical Manufactures. Ceramics, Pottery, Porcelain, Glass, etc. Furniture, etc. Yarns and Woven Goods of Vegetable or Mineral Materials. Woven and Felted Goods of Wool, etc. Silk and Silk Fabrics. Clothing, Jewelry, etc. Paper, Blank Books, Stationery. Weapons, etc. Medicine, Surgery, Prosthesis. Hardware, Edge Tools, Cutlery, and Metallic Products. Fabrics of Vegetable, Animal, or Mineral Materials. Carriages, Vehicles, and Accessories.
	III. EDUCATION AND SCIENCE.	300—309 310—319 320—329 330—339 340—349	Educational Systems, Methods, and Libraries. Institutions and Organizations. Scientific and Philosophical Instruments and Methods. Engineering, Architecture, Maps, etc. Physical, Social, and Moral Condition of Man.
ART GALLERY.	IV. ART.	400—409 410—419 420—429 430—439 440—449 450—459	Sculpture. Painting. Engraving and Lithography. Photography. Industrial and Architectural Designs, etc. Ceramic Decorations, Mosaics, etc.
MACHINERY BUILDING.	V. MACHINERY.	500—509 510—519 520—529 530—539 540—549 550—559 560—569 570—579 580—589 590—599	Machines, Tools, etc., of Mining, Chemistry, etc. Machines and Tools for working Metal, Wood, and Stone. Machines and Implements of Spinning, Weaving, etc. Machines, etc., used in Sewing, Making Clothing, etc. Machines for Printing, Making Books, Paper Working, etc. Motors, Power Generators, etc. Hydraulic and Pneumatic Apparatus. Railway Plant, Rolling Stock, etc. Machinery used in Preparing Agricultural Products. Aerial, Pneumatic, and Water Transportation. Machinery and Apparatus, especially adapted to the requirements of the Exhibition.
AGRICULTURAL BUILDING.	VI. AGRICULTURE.	600—609 610—619 620—629 630—639 640—649 650—659 660—669 670—679 680—689 690—699	Arboriculture and Forest Products. Pomology. Agricultural Products. Land Animals. Marine Animals, Fish Culture, and Apparatus. Animal and Vegetable Products. Textile Substances of Vegetable or Animal origin. Machines, Implements, and Processes of Manufacture. Agricultural Engineering and Administration. Tillage and General Management.
HORTICULTURAL BUILDING.	VII. HORTICULTURE.	700—709 710—719 720—729 730—739	Ornamental Trees, Shrubs, and Flowers. Hot Houses, Conservatories, Graperies. Garden Tools, Accessories of Gardening. Garden Designing, Construction, and Management.



The full text of the classification of the several Departments will be found at the commencement of the enumeration of objects shown in each. The distribution of the departments and buildings through the four volumes of the catalogue, is as follows:

VOLUME I.—DEPARTMENT I. *Mining and Metallurgy*; II. *Manufactures*; III. *Education and Science*. Main Building and Annexes.

VOLUME II.—DEPARTMENT IV. *Art*. Memorial Hall and Annexes.

VOLUME III.—DEPARTMENT V. *Machinery*. Machinery Building and Annexes. Buildings of United States government and foreign governments, of State governments, and of individual exhibitors.

VOLUME IV.—DEPARTMENT VI. *Agriculture*; VII. *Horticulture*. Agricultural and Horticultural Buildings and Annexes, Alphabetical Index of Exhibitors, Commissioners, Judges, etc.

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F. N. Dow, Portland.  
E. Knight, Portland.

## MARYLAND.

John G. Morris, Baltimore.  
J. Thomas Scharf, Baltimore.  
George A. Hanson, Baltimore.

Douglass H. Thomas, Baltimore.  
William H. Corner, Baltimore.

## MASSACHUSETTS.

J. T. Chadwick, Boston.  
Curtis Guild, Boston.  
Hiram Hosford, Lowell.  
C. E. Whitier, Whitiersville.  
George T. Plunkett, Hinsdale.  
Henry M. Phillips, Springfield.  
E. T. Miles, Fitchburg.  
J. H. Claremont, Boston.  
Lewis N. Gilbert, Ware.

John Savery, Wareham.  
Wm. F. Whiting, Ashburnham.  
Chester Snow, Harwick.  
C. E. Yeomans, Westfield.  
S. B. Phinney, Barnstable.  
Daniel Needham, Groton.  
H. G. Knight, Easthampton.  
Harrison Tweed, Taunton.  
E. W. Kinsley, Boston.

## MICHIGAN.

John J. Bagley, Detroit.  
Henry Fralick, Grand Rapids.  
Jonathan J. Woodman, Paw Paw.

Merrill J. Mills, Detroit.  
Jay A. Hubbell, Houghton.  
F. W. Noble, *Secretary*, Detroit.

## MINNESOTA.

Paris Gibson, Minneapolis.  
Pennock Pusey, St. Paul.

Philip S. Harris, St. Paul.

## MISSISSIPPI.

A. M. West, *President*, Holly Springs.  
H. W. Warren, *Vice-President*, Jackson.  
H. M. Street, *Treasurer*, Booneville.  
A. E. Lewis, Scranton.  
James A. Hoskins, Brookhaven.

Frank Burkitt, Houston.  
J. L. Power, *Secretary*, Jackson.  
J. B. Yellowley, Madison Station.  
W. G. Paxton, Vicksburg.

## MISSOURI.

Thomas Allen, *President*, St. Louis.  
J. F. Cook, LL.D., Lagrange.  
J. W. Harris, Rocheport.

J. W. Strong, *Vice-President*, St. Joseph.  
P. Murphy, Coplin.  
J. L. Tracy, St. Louis.

## MONTANA.

T. C. Power, Fort Benton, Chateaux.  
Wm. Peck, Bannack, Beaverhead.  
Armstrong, Glendale, Beaverhead.  
Mrs. S. B. Bowen, Bozeman, Gallatin.

W. A. Clark, Deer Lodge, Deer Lodge.  
D. J. Welch, Missoula, Missoula.  
J. A. Harding, Radersburg, Jefferson.  
T. E. Collins, Diamond, Meagher.

## NEBRASKA.

Daniel H. Wheeler, Plattsmouth.  
J. S. Morton, Nebraska City.  
W. D. Scott, Rulo.

Gay C. Barton, North Platte.  
Charles F. Manderson, Omaha.

## NEVADA.

C. C. Stevenson, *President*, Gold Hill.  
Thomas G. Taylor, Gold Hill.  
R. Robinson, White Pine.  
J. D. Sullivan, Eureka.  
H. H. Day, Lincoln.  
F. R. Hall, Nye.  
A. A. Curtis, Lander.  
John C. Fall, Humboldt.

H. M. Yerington, Ormsby.  
H. T. Rice, Ormsby.  
B. F. Leete, Washoe.  
J. R. Johnson, Douglass.  
Levi Wilsey, Elk.  
Jeremiah Miller, Esmeralda.  
B. P. Hazeltine.

## NEW HAMPSHIRE.

James A. Weston, *Chairman*, Manchester.  
Lewis W. Clark, Manchester.  
Mason W. Tiptan, Bradford.

Edward D. Baker, Claremont.  
James F. Briggs, *Secretary*, Manchester.  
George W. Riddle, Manchester.

## NEW JERSEY.

Samuel C. Brown, *President*, Trenton.  
Edward Bettle, Camden.  
Henry L. Janeway, New Brunswick.  
John T. Bird, Flemington.

Thomas H. Dale, Paterson.  
Sanford B. Hunt, Newark.  
Nathan W. Condict, Jersey City.  
Patrick T. Quinn, *Secretary*, Newark.

## NEW MEXICO.

Stephen B. Elkins, Washington, D. C.  
W. F. M. Army, *Secretary*, Fort Defiance.  
Richard Hudson, Silver City.

W. G. Ritch, *President*, Santa Fé.  
Thomas S. Tucker, *Treasurer*, Santa Fé.  
José D. Sena, Santa Fé.

## NEW YORK.

Alonzo B. Cornell, Ithaca, Tompkins Co.  
John Murdock, Elmira, Chemung Co.  
Jackson S. Schultz, No. 63 Cliff St., New York City.  
Frank Leslie, No. 537 Pearl St., New York City.

Felix Campbell, No. 1315 Pacific St., Brooklyn.  
H. Havermyer, New York.  
Frederick A. Conkling.

## OHIO.

R. P. Ranny, *President*, Cleveland.  
Rutherford B. Hayes, Fremont.  
E. F. Noyes, Cincinnati.  
G. W. McCook, Steubenville.

Barnabas Burns, Mansfield.  
F. F. Green, *Secretary and Superintendent*, Cleveland.

## OREGON.

M. Wilkins, Willamette Forks.  
C. P. Burkhardt, Albany.  
E. R. Geary, Albany.  
W. J. Halsey, Portland.

M. P. Deady, Portland.  
Thomas Condon, Forest Grove.  
S. G. Reed, Portland.

## PENNSYLVANIA.

Morton McMichael, Philadelphia.  
 Andrew G. Curtin, Bellefonte.  
 John H. Shoenburger, Pittsburg.

George Scott, Catawissa.  
 Foster W. Mitchell, Franklin.

## RHODE ISLAND.

John Gorham, Providence.  
 Hon. Henry Lippitt, Providence.  
 James Y. Smith, Providence.

William Goddard, Providence.  
 Rowland Hazard, Providence.  
 John R. Bartlett, Providence.

## TENNESSEE.

J. M. Safford, Davidson Co.  
 C. C. Giers, Davidson Co.  
 J. T. Wilder, Hamilton Co.

Joseph Barbiere, Shelby.  
 George E. Purvis, Nashville.  
 S. B. Lowe, Chattanooga.

## TEXAS.

J. E. Preston, Marlin.  
 E. L. Gregg, Rush.

S. J. Adams, Dallas.

## UTAH.

Wm. Jennings, *President*, Salt Lake City.  
 Henry C. Goodspeed, *Secretary*, Salt Lake City.

John T. Caine, Salt Lake City.  
 Joseph R. Walker, Salt Lake City.  
 George S. Prescott, Salt Lake City.

## VERMONT.

Joseph S. Patterson.  
 P. P. Pitkin.

## VIRGINIA.

John D. Imboden, *President*, Richmond.  
 Marshall Parks, Norfolk.  
 Samuel J. Moffitt, Harrisonburg.

G. J. Wharton, Pulaski Co.  
 Edward M. Pace, Danville.

## WASHINGTON TERRITORY.

James S. Lawson, Olympia.  
 Charles E. P. Wood, Port Discovery.  
 Edward S. Kearney, Walla Walla.

Henri M. Chase, Walla Walla.  
 Phillip Ritz, Walla Walla.

## WEST VIRGINIA.

O. C. Dewey, Wheeling.  
 G. W. Franzheim, Wheeling.  
 C. N. Beall, Bethany.

Thomas Maslin, Moorsfield.  
 I. P. Hale, Charleston.

## WISCONSIN.

J. B. Parkinson, *President*, Madison.  
 Eli Stilson, Oshkosh.  
 Adolph Meinecke, Milwaukee.  
 J. I. Case, Racine.

T. C. Pound, Chippewa Falls.  
 F. Kuehn, *Treasurer*, Manitowoc.  
 W. W. Field, *Secretary*, Madison.

## WYOMING.

J. R. Whitehead, Cheyenne.  
 Stephen W. Downey, Laramie City.  
 James France, Rawlins.

John Fosher, South Pass City.  
 J. H. Pyachou, Laramie City.  
 J. A. Van Carter, Fort Bridger.

## SYSTEM OF AWARDS.

THE Centennial Commission have substituted for the international juries employed at previous International Exhibitions, a system of awards which provided :

That awards shall be based upon written reports attested by the signatures of their authors.

That the judges should be selected for their known qualifications and character, and should be experts in the departments to which they are respectively assigned; the foreign members of this body being appointed by the Commission of each country and in conformity with the distribution and allotment to each; the judges from the United States by the Centennial Commission.

That judges should be reimbursed for their personal expenses.

That reports and awards should be based upon inherent and comparative merit; the elements of merit being held to include considerations relating to originality, invention, discovery, utility, quality, skill, workmanship, fitness for the purposes intended, adaptation to public wants, economy, and cost.

That each report should be delivered to the Centennial Commission as soon as completed, for final award and publication.

That awards should be finally decreed by the United States Centennial Commission, in compliance with the Act of Congress, and should consist of a diploma with a uniform Bronze Medal, and a special report of the judges on the subject of the Award.

That each exhibitor shall have the right to produce and publish the report awarded to him, but the United States Centennial Commission reserves the right to publish and dispose of all reports in the manner it thinks best for public information, and also to embody and distribute the reports as records of the Exhibition.

## JUDGES OF AWARDS.

### GROUP I.

**Minerals, Mining, and Metallurgy, including the Machinery.**—(Classes 100 to 108 of the classification. See page 27.)

**Metals, Metallurgical Products and Processes.**—(Classes 110 to 115.)

**Machines, Tools, and Apparatus of Mining and Metallurgy.**—(Classes 300 to 307, and 312.)

**Mine Engineering—Models, Maps, and Sections.**—(Classes 120, 121.)

#### AMERICAN.

Alexander L. Holley, 96 Broadway, N.Y.  
 Prof. T. Sterry Hunt, LL.D., F.R.S.,  
 St. James Hotel, Boston, Mass.  
 Prof. J. M. Safford, Nashville, Tennessee.  
 S. B. Axtell, Santa Fé, New Mexico.  
 John Fritz, Bethlehem, Pa.  
 Austin Savage, Boise City, Idaho.  
 W. S. Keyes, M. E., Eureka, Nevada.  
 Prof. Frederick Prime, jr., Easton, Pa.  
 Matthew Addy, Cincinnati, Ohio.  
 Prof. G. C. Broadhead, Pleasant Hill,  
 Missouri.

#### FOREIGN.

Mr. Isaac Lowthian Bell, M.P., F.R.S.,  
 Great Britain.  
 Mr. Ernst F. Althaus, Breslau, Germany.  
 Mr. Louis Simonin, Paris, France.  
 Mr. F. Valton, France.  
 Mr. R. Akerman, Stockholm, Sweden.  
 Mr. Achille Jottrand, Belgium.  
 M. L. Nicholsky, Russia.  
 Mr. Nicholas Jossa, Russia.  
 Dr. Th. Kjerulf, Christiania, Norway.  
 Don Daniel de Cortazar, Spain.

### GROUP II.

**Pottery, Glass, Artificial Stone, etc.**—(Classes 206 to 216, and 219, 203, 317, 318.)

#### AMERICAN.

Gen. Q. A. Gilmore, U. S. A., care D.  
 Van Nostrand, New York.  
 Arthur Beckwith, 134 Fifth Avenue, New  
 York.  
 Prof. E. T. Cox, Indianapolis, Indiana.  
 Gen. Hector Tyndale, Philadelphia, Pa.  
 Henry Wurtz, Hoboken, N. J.

#### FOREIGN.

R. H. Soden Smith, M.A., Great Bri-  
 tain.  
 Dr. G. Seelhorst, Nuremberg, Germany.  
 M. Ch. de Bussy, Paris, France.  
 Adolf E. Nordenskiöld, Sweden.  
 Mr. K. Notomi, Japan.

### GROUP III.

**Chemistry and Pharmacy, including the Apparatus.**—(Classes 200 to 203, and 274, 206, 209, and 699.)

#### AMERICAN.

Prof. C. A. Joy, Columbia College, New  
 York.  
 Prof. F. A. Genth, University of Pennsyl-  
 vania, Philadelphia, Pa.  
 Prof. J. Lawrence Smith, Louisville, Ky.  
 Prof. C. F. Chandler, Columbia College,  
 New York.  
 Prof. J. W. Mallet, University of Vir-  
 ginia, Charlottesville, Virginia.

#### FOREIGN.

Dr. William Odling, F.R.S., Great Bri-  
 tain.  
 Dr. Rudolf von Wagner, Würzburg,  
 Germany.  
 M. J. F. Kuhlmann Lilla, France.  
 Mr. Prosper De Wilde, Belgium.  
 Mr. Emanuel Paterno, Italy.

## GROUP IV.

Animal and Vegetable Products, and the Machinery for their Preparation.—(Classes 650 to 661.)

## AMERICAN.

Prof. W. C. Kerr, Raleigh, N. C.  
L. B. Arnold, Rochester, N. Y.  
Col. J. F. Tobias, 1705 Locust Street,  
Philadelphia, Pa.  
Col. John Bradford, Tallahassee, Fla.  
Guido Marx, Toledo, Ohio.  
Ryland T. Brown, Indianapolis, Ind.  
W. S. Green, Millford, Wis.

## FOREIGN.

Mr. Edouard Martell, France.  
Don Edward Loring, Malaga, Spain.  
Dr. Nicolau J. Moreira, Brazil.  
M. Jayme Batalha Reis, Portugal.  
Mr. Ekeda Kenzo, Japan.  
E. Oldendorff, Argentine Confederation.  
Dr. E. H. Von Bamshauer, Netherlands.  
H. G. Joly, M. P., Canada.  
Julius Wegeler, Coblenz, Germany.  
G. F. Seecchi de Casali, Italy.  
Prof. Thomas R. Segeiche, Denmark.  
Rustem Effendi, Turkey.

## GROUP V.

Fish and Fish Products—Apparatus of Fishing, etc.—(Classes 640 to 648.)

## AMERICAN.

Prof. S. F. Baird, Smithsonian Institution, Washington.  
T. B. Ferguson, Baltimore, Md.

## FOREIGN.

Joachim Andersen, Norway.

## GROUP VI.

Timber, Worked Lumber, Parts of Buildings, Forestry.—(Classes 600 to 607.)

## AMERICAN.

Prof. Wm. H. Brewer, New Haven, Conn.  
J. M. Bennett, Weston, Lewis Co., W. Va.  
Prof. J. S. Newberry, Cleveland, Ohio, or  
Columbia College, N. Y.

## FOREIGN.

John R. West, Chili.  
M. Rodrigues de Vasconcellos, Portugal.  
Hon. W. Skead, Canada.  
Dr. José de Saldanha, Brazil.

## GROUP VII.

Furniture, Upholstery, Wooden Ware, Baskets, etc.—(Classes 217, 220, 221, 222, 226, 228, 229, 230.)

## AMERICAN.

Addison Boyden, Boston, Mass.  
Chauncey Wiltse, Omaha, Neb.  
Robert Mitchell, Cincinnati, O.

## FOREIGN.

Le Marquis de Rochambeau, France.  
Mr. Theo. Snyers, Belgium.  
Francis Thonet, Austria.

## GROUP VIII.

Cotton, Linen, and other Fabrics; including the Materials and the Machinery.—(Classes 228, 229 to 234, 521, 523, 524, 665, 666.)

## AMERICAN.

Edward Atkinson, Boston, Mass.  
Hugh Waddell, jr., Savannah, Ga.  
Col. Ed. Richardson, Jackson, Miss.  
A. D. Lockwood, Providence, R. I.  
Chas. H. Wolff, Cincinnati, Ohio.  
Samuel Webber, C. E., Manchester, N. H.  
George O. Baker, Selma, Ala.

## FOREIGN.

Mr. Isaac Watts, Great Britain.  
Mr. W. W. Hulsc, C. E., Great Britain.  
Consul Gustav Gebhard, Germany.  
Albert Daines, Turkey.  
Don Alvaro de la Gandara, Spain.  
Major A. Goldy, Switzerland.  
Prof. Gustave Herrmann, Germany.  
Prof. Giuseppe Dassi, Italy.

## GROUP IX.

Wool and Silk Fabrics, including the Materials and the Machinery. Woven and Felted Goods of Wool, and Mixtures of Wool.—(Classes 235 to 241, 522, and 667.)

Silk and Silk Fabrics, and Mixtures in which Silk is the Predominating Material.—(Classes 242 to 249 and 530.)

## AMERICAN.

John L. Hayes, Cambridge, Mass.  
Hon. Elliot C. Cowdin, New York.  
Chas. Le Boutillier, Philadelphia, Pa.  
Chas. J. Ellis, 714 Market St., Philadelphia, Pa.  
J. D. Lang, Vassalboro', Me.

## FOREIGN.

Mr. Henry Mitchell, Great Britain.  
Dr. Max Weigert, Germany.  
Mr. Chatel, France.  
Carl Arabeberg, Sweden.  
Mr. Hayami Kenzo, Japan.  
Mr. John G. Neeser, Switzerland.  
August Behmer, Egypt.  
Theodore Bochner, Austria.



**GROUP X.**

**Clothing, Furs, India Rubber Goods, Ornaments, and Fancy Articles. (Exclusive of Leather Boots and Shoes.)—(Classes 250 to 257 and 288.)**

**Caoutchouc and Gutta Percha Industry.—(Class 285.)**

**AMERICAN.**

Prof. W. H. Chandler, Ph.D., F.C.S.,  
Lehigh University, Bethlehem, Pa.  
Wm. O. Linthicum, New York City.  
Benj. F. Britton, New York City.  
Dr. George Hewston, San Francisco, Cal.  
Prof. E. N. Horsford, Cambridge, Mass.

**FOREIGN.**

Mr. Dietz-Monnin, France.  
Mr. Modest Kittary, Russia.  
Mr. Edward Kanitz, Austria.  
Mr. M. P. Empey, Canada.

**GROUP XI.**

**Jewelry, Watches, Silverware, Bronzes, etc.—(Class 253.)**

**AMERICAN.**

Martin P. Kennard, Boston, Mass.  
Peter Gottsleben, Denver, Col.

**FOREIGN.**

G. H. Heap, Tunis.  
M. Rouleaux du Gage, France.

**GROUP XII.**

**Leather and Manufactures of Leather, including Boots, Shoes, Trunks, etc.—(Classes 532 and 533.)**

**AMERICAN.**

Gov. F. H. Pierpont, Fairmount, Marion Co.,  
W. Va.  
John Cummings, Boston, Mass.  
Thomas Miles, Philadelphia, Pa.  
J. P. Pusdes, Wilmington, Del.

**FOREIGN.****GROUP XIII.**

**Paper Industry, Stationery, Printing, and Book Making.—(Classes 258 to 264.)**  
**Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for making Books and Paper Working.—(Classes 525 and 540 to 547.)**

**AMERICAN.**

James M. Willcox, Ph.D., Glen Mills, Pa.,  
1722 Spruce St., Phila.  
C. O. Chapin, Springfield, Mass.  
Wm. Faxon, Hartford, Conn.  
Edward Couly, Cincinnati, Ohio.  
H. T. Brian, Government Printing Office,  
Washington.

**FOREIGN.**

Sir Sidney H. Waterlow, Bart., M.P., Great  
Britain.  
G. W. Seltz, Germany.

**GROUP XIV.**

**Apparatus of Heating, Lighting, Ventilation, Water Supply, and Drainage.—(Classes 222 to 224.)**

**AMERICAN.**

C. C. Cox, M.D., LL.D., Washington, D. C.  
Asa Ames, jr., M.D., Wakefield, Mass.

**FOREIGN.****GROUP XV.**

**Builders' Hardware, Edge Tools, Cutlery, etc.—(Classes 280 to 284.)**

**AMERICAN.**

Charles Staples, Portland, Me.  
Daniel Steinmetz, Philadelphia.  
George L. Reed, Clearfield, Pa.  
Gen John D. Imboden, Richmond, Va.

**FOREIGN.**

Hon. J. Bain, Lord Provost of Glasgow, Great  
Britain.  
Mr. D. McHardy, Great Britain.  
Mr. Diefenbach, Germany.

**GROUP XVI.**

**Military and Sporting Arms, Weapons, Apparatus of Hunting, Explosives, etc.—(Classes 204, 205, and 265 to 270.)**

**AMERICAN.**

Col. S. C. Lyford, U.S.A. (Chairman Govern-  
ment Board, etc).  
Gen. H. L. Abbott, U.S.A., Willets' Point,  
N. Y.  
George A. Hamilton, St. Paul, Minn.

**FOREIGN.**

Major Wm. H. Noble, R.A., Great Britain.  
Capt. Comm't of Artillerie Lesne, Belgium.  
Capt. L. F. Saldanha da Gama, Brazil.

**GROUP XVII.****Carriages, Vehicles, and Accessories.**—(Classes 292 to 296.)**AMERICAN.**

Thos. Goddard, Boston, Mass., 134 State St.  
B. F. Morse, Augusta, Me.

**FOREIGN.**

Mr. Guet, France.  
Mr. Duffus, Canada.

**GROUP XVIII.****Railway Plant, Rolling Stock, and Apparatus, Road Engines.**—(Classes 370 to 377.)**AMERICAN.**

Robert E. Ricker, Elizabeth, N. J.  
Gen. T. A. Morris, Indianapolis, Ind.  
Felician Slataper, Pittsburg, Pa.

**FOREIGN.**

Capt. Douglas Galton, R.E., C.B., F.R.S.,  
Great Britain.  
Mr. Ernest Pontzen, Austria.  
Mr. E. E. A. Schaar, Belgium.

**GROUP XIX.****Vessels and Articles of Transportation**—(not included in other groups).—(Classes 287 to 544, and 590 to 597.)**AMERICAN.**

Isaac Newton, New York.  
J. W. Griffith, Portsmouth, N. H.  
H. C. Goodspeed, Salt Lake City, Utah.

**FOREIGN.**

Col. F. H. Rich, R.E., Great Britain.

**GROUP XX.****Motors, Hydraulic and Pneumatic Apparatus, etc.**—(Classes 530 to 555, and 560 to 568.)**AMERICAN.**

C. T. Porter, Newark, N. J.  
Joseph Belknap, New York.  
James Moore, Philadelphia.  
Horatio Allen, South Orange—"Homewood,"  
N. J.  
Chas. E. Emery, 7 Warren Street, New York.

**FOREIGN.**

Mr. W. H. Barlow, C.E., Great Britain.  
Prof. Reuleaux, Germany.  
Nicholas Petroff, Russia.  
Emil Brugsch, Egypt.

**GROUP XXI.****Machine Tools—Wood, Metal, and Stone.**—(Classes 510, 511, and 514 to 516.)**AMERICAN.**

Irving M. Scott, Union Iron Works, San Francisco, Cal.  
George H. Blelock, Springfield, Mass.  
W. F. Durfee, Wisconsin (at 56 Broadway, New York).  
Prof. John A. Anderson, President Kansas State Agricultural College, Manhattan, Kan.

**FOREIGN.**

Mr. John Anderson, LL.D., C.E., Great Britain.  
M. Le Commandant F. Perier, France.  
Mr. C. A. Angstrom, Sweden.  
Mr. Auguste Gobert (fils), Belgium.  
Mr. Felix Reiser, Austria.

**GROUP XXII.****Machines, Apparatus, and Implements used in Sewing and Making Clothing, Lace, Ornamental Objects, Pins, etc.**—(Classes 530, 531, and 534 to 537.)**AMERICAN.**

George W. Gregory, Boston, Mass.  
Edward H. Knight, Patent Office, Washington, D. C.  
L. D. F. Poore, Springfield, Dakota.

**FOREIGN.**

Mr. Fred. A. Paget, C.E., Great Britain.

**GROUP XXIII.****Agricultural Machines, Implements of Agriculture, Horticulture, and Gardening.**—(Classes 670 to 675, and 680 to 683.)**Tillage and General Management.**—(Classes 690 to 692, and 715, 716.)**Garden Tools, Accessories of Gardening.**—(Classes 720 to 722.)**Garden Designing, Construction, and Management.**—(Classes 710, and 731 to 733.)**AMERICAN.**

Hon. John P. Reynolds, Chicago, Ill.  
James S. Grinnell, Washington, D. C.  
Geo. E. Waring, jr., Newport, R. I.  
James Bruce, Corvallas, Oregon.

**FOREIGN.**

Mr. John Coleman, Great Britain.  
Dr. Jose de Saldanha, Brazil.  
Don Fernin Rosillo, Spain.

**GROUP XXIV.****Instruments and Apparatus of Hygiene, Medicine, Surgery, Prothesis, etc.**—(Classes 272, 273, and 275 to 278.)**AMERICAN.**

C. B. White, M.D., New Orleans, La.  
J. H. Thompson, A.M., M.D., Washington, D. C.

**FOREIGN.**

Dr. William Roth, Germany.  
Dr. Ernst Fleischel, Austria.

**GROUP XXV.**

**Instruments of Precision, Research, Experiment, and Illustration, including Telegraphy and Music.**—(Classes 320 to 327.)

**AMERICAN.**

Prof. Joseph Henry, LL.D., Secretary of Smithsonian Institution, Washington, D. C.  
 Prof. F. A. P. Barnard, S.T.D., LL.D., Columbia College, N. Y.  
 Prof. J. E. Hilgard, Washington, D. C.  
 Prof. J. C. Watson, Ann Arbor, Mich.  
 General Henry K. Oliver, Salem, Mass.  
 Geo. F. Bristow, New York.

**FOREIGN.**

Sir William Thomson, LL.D., D.C.L., F.R.S., Great Britain.  
 Jul. Schiedmayer, Germany.  
 Mr. E. Levasseur, France.  
 P. F. Kupka, Austria.  
 Edw. Favre Perret, Switzerland.

**GROUP XXVI.**

**Architecture and Engineering.** (For Agricultural Engineering, see Class 680.) (For Mine Engineering, see Group I.) **Architecture.**—(Classes 341, 342.)

**Engineering.**—(Classes 330 to 333, and 335.)

**AMERICAN.**

James B. Eads, C.E., South Pass Jetty Works, 122 Common Street, New Orleans, La.  
 General Wm. B. Franklin, Hartford, Conn.  
 Richard M. Hunt, 49 West Thirty-fifth Street, New York.

**FOREIGN.**

Sir John Hawkshaw, C.E., F.R.S., Great Britain.  
 Mr. Lavoinnie, France.  
 J. M. da Silva Continho, Brazil.  
 J. G. W. Fynje, Netherlands.  
 Lourenço Maheiro, M.E., Portugal.

**GROUP XXVII.**

**Plastic and Graphic Art Sculpture.**—(Classes 400 to 405.)

**Painting.**—(Classes 410 to 413.)

**Engraving and Lithography.**—(Classes 420 to 424.)

**Photography.**—(Classes 430 to 432.)

**Industrial and Architectural Designs, Models, and Decorations.**—(Classes 440 to 443.) (Classes 450 to 454.)

**Decoration with Ceramic and Vitreous Materials; Mosaic and Inlaid Work.**

**AMERICAN.**

Frank Hill Smith, Boston, Mass.  
 James L. Claghorn, Philadelphia, Pa.  
 Prof. S. F. Weir, New Haven, Conn.  
 Donald G. Mitchell, New Haven, Conn.  
 Geo. Ward Nichols, Cincinnati, Ohio.  
 Prof. Henry Draper, Medical College, New York City.

**FOREIGN.**

Mr. Charles West Cope, R.A., Great Britain.  
 Mr. Peter Graham, Great Britain.  
 Carl Schlesinger, Germany.  
 Dr. H. Vogel, Germany.  
 Mr. Emile T. Saintain, France.  
 Fritz L. Dardel, Sweden.  
 P. N. Arbo, Norway.  
 Count of Donadis, Spain.  
 Mr. Tantardini, Italy.  
 Guglielmo de Sanctis, Italy.  
 Mr. Carl Costenoble, Austria.  
 Prof. V. Dahlerup, Denmark.  
 J. E. van Heemskerck van Beest, Netherlands.

**GROUP XXVIII.**

**Educational Systems, Methods, and Libraries.**—(Classes 300 to 306.)

**Institutions and Organizations.**—(Classes 310 to 313.)

**AMERICAN.**

Hon. Andrew D. White, LL.D., President of Cornell University, Ithaca, N. Y.  
 D. C. Gilman, LL.D., President of St. John's Hopkins University, Baltimore, Md.  
 Hon. J. M. Gregory, LL.D., Pres. Illinois Industrial Union, Champaign, Ill.  
 Hon. J. W. Hoyt, M.D., LL.D., Madison, Wis.

**FOREIGN.**

Sir Charles Reed, Great Britain.  
 Mr. René Fourret, France.  
 Col. John Marin, Spain.  
 Prof. Dr. Otto Martin Torell, Sweden.

# BUILDINGS AND SPECIAL EXHIBITS WITHIN THE EXHIBITION GROUNDS.

[NOTE.—The buildings bear the numbers prefixed to them in this table, being the numbers adopted by the Centennial Guide Book Co. (Limited).]

## Buildings South of the Avenue of the Republic.

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4. American Boiler House,	III.	117
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6. British Boiler House,	III.	117
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9. Office U. S. Centennial Commission,	III.	117
10. Centennial National Bank,	III.	117
11. Weimer Machine Works,	III.	118
12. Bartholdi Fountain	III.	146
13. Catholic Total Abstinence Union Fountain,	III.	146
14. Fuller, Warren, & Co., Heating Apparatus,	III.	118
15. Gillender & Sons, Glassware Manufactory,	III.	118
16. Camp of West Point Cadets,	III.	118
17. Iron Pipe,	III.	118
18. Liberty Stove Works,	III.	118
19. Annex, Saw Mill,	III.	119
20. Boiler House,	III.	119
21. Railway Engine House,	III.	119
22. St. Cecilia Organs,	III.	119
23. Automatic Railway,	III.	119
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25. Gunpowder Pile-Driver,	III.	119
26. Jesse Star & Son, Iron Works,	III.	119
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28. Pneumatic Tubes,	III.	119
29. New England Granite Co.'s Exhibit,	III.	120
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31. State of Nevada Quartz Mill,	III.	120
32. Store House,	III.	120
33. Friction Drum,	III.	120
34. Stokes & Parrish, U. S. Hoisting Machine,	III.	120
35. Chilean Amalgamating Machinery,	III.	120
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37. Old Locomotive and Car,	III.	121
38. Car House,	III.	121
39. Police Station,	III.	121
40. Averill Paint Co.,	III.	121
41. Centennial Catalogue Co.,	III.	121
42. Stokes & Parrish, Boiler House,	III.	121
43. Ehret's Waterproof Roofing,	III.	121
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53½. Jerusalem Bazaar,	III.	122
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58. Illinois State Building,	III.	124
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59½. Fog Horn and Bell,	III.	124
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61. New Hampshire State Building,	III.	125
62. Connecticut State Building,	III.	125
63. Massachusetts State Building,	III.	125
64. Delaware State Building,	III.	125
65. Maryland State Building,	III.	125
66. Arkansas State Building,	III.	125
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68. West Virginia State Building,	III.	125
69. Canadian Log House,	IV.	134
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74. New York State Building,	III.	130
75. Liénard's Relief Plans, Paris, Jerusalem, Italy, etc.,	III.	130
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77. Cigar Stand,	III.	131
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79. Tunisian Café and Bazaar,	III.	131
80. Columbus Monument,	III.	131
81. Drinking Fountains,	III.	131
82. Restaurant "Trois Frères Provençaux,"	III.	131
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94. California State Building,	III.	142
95. Centennial Fire Patrol, No. 1,	III.	142
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97. Office Frank Leslie's Publications,	III.	143
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113. Railroad Ticket Office,	III.	144
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120. French Government Building,	III.	145
121. Centennial Fire Patrol, No. 2,	III.	145
122. Penn'a Educational Building,	III.	146
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135. Bankers' Building,	III.	148
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138. Centennial Police Station,	III.	149
139. Philadelphia City Building,	III.	149
140. Music Pavilion,	III.	149
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159. Great American Restaurant,	III.	150
160. German Restaurant,	III.	151
161. Tea and Coffee Press,	III.	151
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168. Model House Apiary,	IV.	140
169. Guano Company,	III.	151
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171. Wind Mills,	IV.	140
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179. Pop-corn Stands,	III.	152
180. J. L. Mott Co. Fountain,	III.	152



# No. I. THE MAIN EXHIBITION BUILDING.

Size, 1880 by 464 feet.

*Engineers and Architects, HENRY PETTIT & JOS. M. WILSON.*

*Contractor, R. J. DOBBINS.*

*Wrought and Cast Iron Manufactured by WM. SELLERS & CO., Moor Iron Works.*

*Wrought Iron Furnished by A. & P. ROBERTS, Pracey Rolling Mills.*

*Cast Iron Furnished by MORRIS, TASKER, & CO., Pascal Iron Works.*

*Erector of Iron Work, WATSON MANUFACTURING CO.*

THE Main Exhibition Building, containing Departments I, II, III of the Exhibition, is in the form of a parallelogram, extending east and west 1880 feet in length, and north and south 464 feet in width.

The larger portion of the structure is one story in height, and shows the main cornice upon the outside at 45 feet above the ground, the interior height being 70 feet. At the centre of the longer sides are projections 416 feet in length, and in the centre of the shorter sides or ends of the building are projections 216 feet in length. In these projections, in the centre of the four sides, are located the main entrances, which are provided with arcades upon the ground floor, and central facades extending to the height of 90 feet.

The East Entrance forms the principal approach for carriages, visitors being allowed to alight at the doors of the building under cover of the arcade. The South Entrance is the principal approach from street cars, the ticket offices being located upon the line of Elm Avenue, with covered ways provided for entrance into the building itself. The Main Portal on the north side communicates with the Art Gallery, and the Main Portal on the west side gives the main passage way to the Machinery and Agricultural Halls.

Upon the corners of the building there are four towers, 75 feet in height, and between the towers and the central projections or entrances there is a lower roof introduced, showing a cornice at 24 feet above the ground. In order to obtain a central feature for the building as a whole, the roof over the central part, for 184 feet square, has been raised above the surrounding portion, and four towers, 48 feet square, rising to 120 feet in height, have been introduced at the corners of the elevated roof.

The areas covered are as follows:

	SQUARE FEET.	ACRES.
Ground floor, . . . . .	872,320	20.02
Upper floors in projections, . . . . .	37,344	.85
"    "    in towers, . . . . .	26,344	.60
	<hr/> 936,008	<hr/> 21.47

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The general arrangement of the ground plan shows a central avenue or nave 120 feet in width, and extending 1832 feet in length. This is the longest avenue of that width ever introduced into an exhibition building. On either side of this nave there is an avenue 100 feet by 1832 feet in length. Between the nave and side avenues are aisles 48 feet wide, and on the outer sides of the building smaller aisles 24 feet in width. In order to break the great length of the roof lines, three cross avenues or transepts have been introduced of the same widths and in the same relative positions to each other as the nave and avenues running lengthwise, viz.: a central transept 120 feet in width by 416 feet in length, with one on either side of 100 feet by 416 feet, and aisles between of 48 feet. The intersections of these avenues and transepts in the central portion of the building result in dividing the ground floor into nine open spaces, free from supporting columns, and covering in the aggregate an area of 416 feet square. Four of these spaces are 100 feet square, four 100 feet by 120 feet, and the central space or pavilion 120 feet square. The intersections of the 48 feet aisles produce four interior courts 48 feet square, one at each corner of the central space. The main promenades through the nave and central transept are each 30 feet in width, and those through the centre of the side avenues and transepts 15 feet each. All other walks are 10 feet wide, and lead at either end to exit doors.

The following table gives the principal dimensions of the different parts of the building:

#### DIMENSIONS.

Measurements taken from centre to centre of supporting columns.

Length of building, . . . . .	1880 feet
Width of building, . . . . .	464 "
<b>CENTRAL AVENUE OR NAVE.</b>	
Length, . . . . .	1832 feet.
Width, . . . . .	120 "
Height to top of supporting columns, . . . . .	45 "
Height to ridge of roof, . . . . .	70 "
<b>CENTRAL TRANSEPT.</b>	
Length, . . . . .	416 "
Width, . . . . .	120 "
Height to top of columns, . . . . .	45 "
Height to ridge of roof, . . . . .	70 "
<b>SIDE AVENUES.</b>	
Length, . . . . .	1832 "
Width, . . . . .	100 "
Height to top of columns, . . . . .	45 "
Height to ridge of roof, . . . . .	65 "
<b>SIDE TRANSEPTS.</b>	
Length, . . . . .	416 "
Width, . . . . .	100 "
Height to top of columns, . . . . .	45 "
Height to ridge of roof, . . . . .	65 "
<b>CENTRAL AISLES.</b>	
Length at east end, . . . . .	744 feet.
" at west end, . . . . .	672 "
Width, . . . . .	48 "
Height to roof, . . . . .	30 "
<b>SIDE AISLES.</b>	
Length at east end, . . . . .	744 "
" at west end, . . . . .	672 "
Width, . . . . .	24 "
Height to roof, . . . . .	24 "
<b>CENTRE SPACE OR PAVILION.</b>	
Ground plan, . . . . .	120 ft. sq.
Height to top of supporting columns, . . . . .	72 "
Height to ridge of roof, . . . . .	96 "
<b>TOWERS OVER COURTS.</b>	
Ground plan, . . . . .	48 "
Height to roof, . . . . .	120 "
<b>CORNER TOWERS.</b>	
Ground plan, . . . . .	24 "
Height to roof, . . . . .	75 "

The foundations consist of piers of masonry. The superstructure is composed of wrought iron columns, which support wrought iron roof trusses. These columns are composed of rolled channel bars, with plates riveted to the flanges. Lengthwise of the building the columns are spaced at the uniform distance apart of 24 feet. In the entire structure there are 672 columns, the shortest being 23 feet and the longest 125 feet in length. Their aggregate weight is 2,200,000 pounds. The roof trusses



are similar in form to those in general use for depots and warehouses, and consist of straight rafters with struts and tie-bars. The aggregate weight of iron in the roof trusses and girders is 5,000,000 pounds. This building being a temporary construction, the columns and trusses are so designed that they may be easily taken down and erected again at another site.

The sides of the building, for the height of seven feet from the ground, are finished with brickwork in panels between the columns; above the seven feet, with glazed sash. Portions of the sash are movable for ventilation. The roof covering is of tin upon sheathing boards. The ground flooring is of plank upon sills resting upon the ground, with no open space underneath.

The building stands nearly due east and west, and is lighted almost entirely by side light from the north and south sides. Louvre ventilators are introduced over the central nave and each of the avenues. Skylights are introduced over the central aisles.

Small balconies, or galleries of observation, have been provided in the four central towers of the building at the heights of the different stories.

A complete system of water supply, with ample provision of fire cocks, etc., is provided for protection against fire, and for sanitary purposes.

Offices for foreign commissions are placed along the sides of the building, in the side aisles, in proximity to the products exhibited.

The ground was graded and foundation laid for this building in the autumn of 1874. The erection of iron work at the site commenced on May 8th, 1875; the erection of the iron work was finished December 2d, 1875; and the building was accepted from the contractor February 14th, 1876. The cost of the building was \$1,580,000.

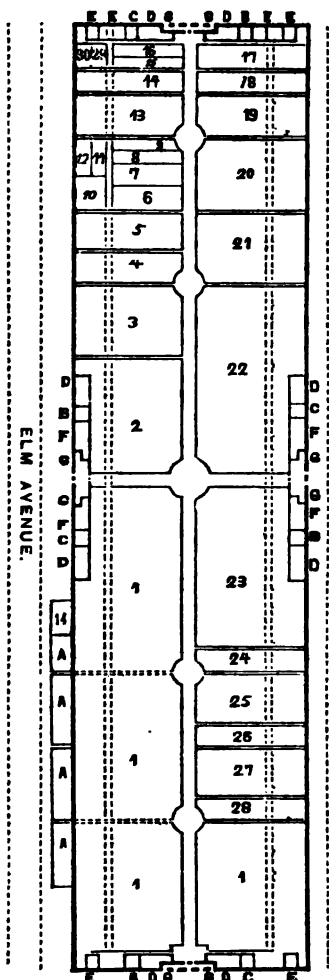
### KEY TO THE NOTATION.

THE location of objects in the Main Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to U—designate the successive ranges of columns, proceeding southward from the northern wall across the width of the building; the figures, the number of the column in each range, counting eastwardly from the western wall, the entire length of the building, from 1 to 79. Thus C 5 is the column in the third range from the north, and the fifth from the western end of the building. The southeasternmost column is U 79.

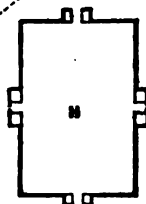
The class of the classification to which each exhibit belongs is indicated by the small figures at the end of the line.

# MAIN EXHIBITION BUILDING.

Scale, 360 ft. to 1 in.



AGRICULTURAL AVENUE.



AVENUE OF THE REPUBLIC.

ELM AVENUE.

1. United States.
2. Germany.
3. Austria and Hungary.
4. Russia.
5. Spain and Philippine Islands.
6. Turkey.
7. Egypt.
8. Denmark.
9. Sweden.
10. Portugal.
11. Tunis.
12. Hawaii.
13. Japan.
14. China.
15. Chili.
16. Argentine Republic.
17. Italy.
18. Norway.
19. Sweden.
20. Australasia and other British Colonies.
21. Canada.
22. Great Britain and India.
23. France and Colonies.
24. Switzerland.
25. Belgium.
26. Brazil.
27. Netherlands.
28. Mexico.
29. Peru.
30. Orange Free State.

- CARRIAGE CONCOURSE.**
- A Mineral Annex.
  - B Ladies' Room.
  - C Gentlemen's Room.
  - D Water-closets.
  - E Offices.
  - F Restaurants.
  - G Stairway to Galleries.
  - H Carriage Annex.

Total Length, 1380 ft. Width, 484 ft. Height, 70 ft.

# CLASSIFICATION.

## DEPARTMENT I.—MINING AND METALLURGY.

### MINERALS, ORES, STONE, MINING PRODUCTS.

**CLASS 100.**—Minerals, ores, etc. Metallic and non-metallic minerals, exclusive of coal and oil. Collections of minerals systematically arranged; collections of ores and associated minerals; geological collections.

**CLASS 101.**—Mineral combustibles. Coal, anthracite, semi-bituminous, and bituminous, coal-waste and pressed coal; albertite, asphalt, and asphaltic limestone; bitumen, mineral tar, crude petroleum.

**CLASS 102.**—Building stones, marbles, slates, etc. Rough, hewn, sawn, or polished, for buildings, bridges, walls, or other constructions, or for interior decoration, or for furniture.

Marble—white, black, or colored—used in building, decoration, statuary, monuments, or furniture, in blocks or slabs not manufactured.

**CLASS 103.**—Lime, cement, and hydraulic cement, raw and burned, accompanied by specimens of the crude rock or material used, also artificial stone, concrete, beton.

Specimens of lime mortar and mixtures, with illustrations of the processes of mixing, etc. Hydraulic and other cement.

Beton mixtures and results, with illustrations of the processes.

Artificial stone for building purposes, building blocks, cornices, etc.

Artificial stone mixtures, for pavements, walls, or ceilings.

Plasters, mastics, etc.

**CLASS 104.**—Clays, kaolin, silex, and other materials for the manufacture of porcelain faience, and of glass, bricks, terra cotta and tiles, and fire brick. Refractory stones for lining furnaces, sandstone, steatite, etc., and refractory furnace materials.

**CLASS 105.**—Graphite, crude and refined; for polishing purposes; for lubricating, electrotyping, photography, pencils, etc.

**CLASS 106.**—Lithographic stones, hones, whetstones, grindstones, grinding and polishing materials, sand quartz, garnet, crude topaz, diamond, corundum, emery in the rock and pulverized, and in assorted sizes and grades.

**CLASS 107.**—Mineral waters, artesian well water, natural brines, saline and alkaline efflorescences and solutions. Mineral fertilizing substances, gypsum, phosphate of lime, marls, shells, coprolites, etc., not manufactured.

### METALLURGICAL PRODUCTS.

**CLASS 110.**—Precious metals.

**CLASS 111.**—Iron and steel in the pig, ingot, and bar, plates and sheets, with specimens of slags, fluxes, residues, and products of working.

**CLASS 112.**—Copper in ingots, bars, and rolled, with specimens illustrating its various stages of production.

**CLASS 113.**—Lead, zinc, antimony, and other metals, the result of extractive processes.

**CLASS 114.**—Alloys used as materials, brass, nickel, silver, solder, etc.

**MINING ENGINEERING—MODELS, MAPS, AND SECTIONS.**

**CLASS 120.**—Surface and underground surveying and plotting. Projection of underground work, location of shafts, tunnels, etc. Surveys for aqueducts and for drainage.

Boring and drilling rocks, shafts, and tunnels, etc. Surveys for aqueducts, and for ascertaining the nature and extent of mineral deposits.

Construction. Sinking and lining shafts by various methods, driving and timbering tunnels, and the general operations of opening, stoping, and breaking down ore, timbering, lagging, and masonry.

Hoisting and delivering at the surface, rock, ore, or miners.

Pumping and draining by engines, buckets, or by adits.

Ventilation and lighting.

Subaqueous mining, blasting, etc.

Hydraulic mining, and the various processes and methods of sluicing and washing auriferous gravel and other superficial deposits.

Quarrying.

**CLASS 121.**—Models of mines, of veins, etc.

# CLASSIFICATION.

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## DEPARTMENT II.—MANUFACTURES.

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### CHEMICALS.

**CLASS 200.**—Chemicals, pharmaceutical preparations.

Mineral acids, and the methods of manufacture. Sulphuric, nitric, and hydrochloric acids.

The common commercial alkalis, potash, soda, and ammonia, with their carbonates.

Salt and its production. Salt from deposits—native salt. Salt by solar evaporation from sea water. Salt by evaporation from water of saline springs or wells. Rock salt. Ground and table salt.

Bleaching powders and chloride of lime.

Yeast powders, baking powders.

**CLASS 201.**—Oils, soaps, candles, illuminating and other gases.

Oils from mineral, animal, and vegetable sources. Refined petroleum, benzine, naphtha, and other products of the manufacture. Oils from various seeds, refined, and of various degrees of purity. Olive oil, cottonseed oil, palm oil. Animal oils, of various kinds, in their refined state. Oils prepared for special purposes besides lighting and for food. Lubricating oils.

Soaps and detergent preparations.

Candles, stearine, glycerine, paraffine, etc., spermaceti.

Illuminating gas and its manufacture.

Oxygen gas, and its application for heating, lighting, metallurgy, and as a remedial agent.

Chlorine and carbonic acid.

**CLASS 202.**—Paints, pigments, dyes, colors, turpentine, varnishes, printing inks, writing inks, blacking.

**CLASS 203.**—Flavoring extracts, essences, perfumery, pomades, cosmetics.

**CLASS 204.**—Explosive and fulminating compounds; in small quantities only, and under special regulations, shown in the building only by empty cases and cartridges. Black powder of various grades and sizes. Nitro-glycerine and the methods of using and exploding. Giant powder, dynamite, dualin, tri-nitroglycerine.

**CLASS 205.**—Pyrotechnics, for display, signaling, missiles.

### CERAMICS—POTTERY, PORCELAIN, ETC.

**CLASS 206.**—Bricks, drain-tiles, terra cotta, and architectural pottery.

**CLASS 207.**—Fire clay goods, crucibles, pots, furnaces. Chemical stoneware.

**CLASS 208.**—Tiles, plain, enameled, encaustic; geometric tiles and mosaics. Tiles for pavements and for roofing, etc.

**CLASS 209.**—Porcelain for purposes of construction. Hardware trimmings, etc.

CLASS 210.—Stone china, for chemists, druggists, etc., earthenware, stoneware, faience, etc.

CLASS 211.—Majolica and Palissy ware.

CLASS 212.—Biscuit-ware, parian, etc.

CLASS 213.—Porcelain for table and toilet use, and for decoration.

#### GLASS AND GLASSWARE.

CLASS 214.—Glass used in construction and for mirrors. Window glass of various grades of quality and of size. Plate glass, rough, and ground or polished. Toughened glass.

CLASS 215.—Chemical and pharmaceutical glassware, vials, bottles.

CLASS 216.—Decorative glassware.

#### FURNITURE AND OBJECTS OF GENERAL USE IN CONSTRUCTION AND IN DWELLINGS.

CLASS 217.—Heavy furniture.—Chairs, tables, parlor and chamber suits, office and library furniture, vestibule furniture. Church furniture and decoration.

CLASS 218.—Table furniture.—Glass, china, silver, silver-plate, tea and coffee sets, urns, samovars, epergnes.

CLASS 219.—Mirrors, stained and enameled glass, cut and engraved window-glass, and other decorative objects.

CLASS 220.—Gilt cornices, brackets, picture frames, etc.

CLASS 221.—The nursery and its accessories; children's chairs, walking chairs.

CLASS 222.—Apparatus and fixtures for heating and cooking,—stoves, ranges, heaters, etc.

CLASS 223.—Apparatus for lighting,—gas fixtures, lamps, etc.

CLASS 224.—Kitchen and pantry,—utensils, tinware, and apparatus used in cooking (exclusive of cutlery).

CLASS 225.—Laundry appliances, washing machines, mangles, clothes-wringers, clothes-bars, ironing-tables.

CLASS 226.—Bath-room and water closet, shower bath, earth closet.

CLASS 227.—Manufactured parts of buildings,—sash, blinds, mantels, metal work, etc.

#### YARNS AND WOVEN GOODS OF VEGETABLE OR MINERAL MATERIALS.

CLASS 228.—Woven fabrics of mineral origin.—Wire cloths, sieve cloth, wire screens, bolting cloth.

Asbestos fibre, spun and woven, with the clothing manufactured from it.

Glass thread, floss, and fabrics.

CLASS 229.—Coarse fibres, of grass, rattan, cocoanut, and bark.

Matting, Chinese, Japanese, palm-leaf, grass, and rushes.

Floor cloths of rattan and cocoanut fibres, aloe fibre, etc.

CLASS 230.—Cotton yarns and fabrics, bleached and unbleached.

Cotton sheeting and shirting, plain and twilled.

Cotton canvas and duck. Awnings, tents.

CLASS 231.—Dyed cotton fabrics, exclusive of prints and calicoes.

CLASS 232.—Cotton prints and calicoes, including handkerchiefs, scarfs, etc.

CLASS 233.—Linen and other vegetable fabrics, uncolored or dyed.

CLASS 234.—Floor oil cloths, and other painted and enameled tissues, and imitation of leather, with a woven base.

#### WOVEN AND FELTED GOODS OF WOOL AND MIXTURES OF WOOL.

CLASS 235.—Card wool fabrics.—Yarns, broadcloth, doekins, fancy cassimeres, Felted goods.

CLASS 236.—Flannels.—Plain flannels, domets, opera and fancy.

CLASS 237.—Blankets, robes, and shawls.

CLASS 238.—Combined wool fabrics.—Worsted, yarns, dress goods for women's wear, delaines, serges, poplins, merinoes.

CLASS 239.—Carpets, rugs, etc.—Brussels, melton, tapestry, tapestry Brussels, Axminster, Venetian, ingrain, felted carpetings, druggetts, rugs, etc.

CLASS 240.—Hair, alpaca, goat's hair, camel's hair, and other fabrics, mixed or unmixed with wool.

CLASS 241.—Printed and embossed woolen cloths, table covers, patent velvets.

SILK AND SILK FABRICS, AND MIXTURES IN WHICH SILK IS THE  
PREDOMINATING MATERIAL.

CLASS 242.—Cocoons and raw silk as reeled from the cocoon, thrown or twisted silks in the gum.

CLASS 243.—Thrown or twisted silks, boiled off or dyed, in hanks, skeins, or on spools.

CLASS 244.—Spun silk yarns and fabrics, and the materials from which they are made.

CLASS 245.—Plain woven silks, lutestrings, sarsnets, satins, serges, foulards, tissues for hat and millinery purposes, etc.

CLASS 246.—Figured silk piece goods, woven or printed. Upholstery silks, etc.

CLASS 247.—Crapes, velvets, gauzes, cravats, handkerchiefs, hosiery, knit goods, laces, scarfs, ties, veils, all descriptions of cut and made up silks.

CLASS 248.—Ribbons, plain, fancy, and velvet.

CLASS 249.—Bindings, braids, cords, galloons, ladies' dress trimmings, upholsterers', tailors', military, and miscellaneous trimmings.

CLOTHING, JEWELRY, AND ORNAMENTS, TRAVELING EQUIPMENTS.

CLASS 250.—Ready-made clothing, knit goods and hosiery, military clothing, church vestments, costumes, waterproof clothing, and clothing for special objects.

CLASS 251.—Hats, caps, boots and shoes, gloves, mittens, etc., straw and palm leaf hats, bonnets, and millinery.

CLASS 252.—Laces, embroideries, and trimmings for clothing, furniture, and carriages.

CLASS 253.—Jewelry and ornaments worn upon the person.

CLASS 254.—Artificial flowers, coiffures, buttons, trimmings, pins, hooks and eyes, fans, umbrellas, sunshades, walking-canes, pipes, and small objects of dress or adornment, exclusive of jewelry. Toys and fancy articles.

CLASS 255.—Fancy leather work, pocketbooks, toilet cases, traveling equipments, valises, and trunks.

CLASS 256.—Furs.

CLASS 257.—Historical collections of costumes, national costumes.

PAPER, BLANK BOOKS, AND STATIONERY.

CLASS 258.—Stationery for the desk, stationers' articles, pens, pencils, inkstands, and other apparatus of writing and drawing.

CLASS 259.—Writing paper and envelopes, blank-book paper, bond paper, tracing paper, tracing linen, tissue paper, etc., etc.

CLASS 260.—Printing paper for books, newspapers, etc.

Wrapping paper of all grades, cartridge and manilla paper, paper bags.

CLASS 261.—Blank books; sets of account books, specimens of ruling and binding, including blanks, bill heads, etc., book binding.

CLASS 262.—Cards; playing cards, cardboard, binders' board, pasteboard, paper or cardboard boxes.

CLASS 263.—Building paper, pasteboard for walls, cane fibre felt for car-wheels, ornaments, etc.

CLASS 264.—Wall papers, enamelled and colored papers, imitations of leather, wood, etc.

**MILITARY AND NAVAL ARMAMENTS, ORDNANCE, FIREARMS, AND  
HUNTING APPARATUS.**

- CLASS 265.**—Military small-arms, muskets, pistols, and magazine guns, with their ammunition.
- CLASS 266.**—Light artillery, compound guns, machine guns, mitrailleuses, etc.
- CLASS 267.**—Heavy ordnance and its accessories.
- CLASS 268.**—Knives, swords, spears, and dirks.
- CLASS 269.**—Firearms used for sporting and hunting, also other implements for the same purpose.
- CLASS 270.**—Traps for game, birds, vermin, etc.

**MEDICINE, SURGERY, PROTHESIS.**

- CLASS 272.**—Medicines; official (in any authoritative pharmacopœia), articles of the materia medica, preparations, unoffical.
- CLASS 273.**—Dietetic preparations, as beef extract and other articles intended especially for the sick.
- CLASS 274.**—Pharmaceutical apparatus.
- CLASS 275.**—Instruments for physical diagnosis, clinical thermometers, stethoscopes, ophthalmoscopes, etc. (except clinical microscopes, etc., for which see Class 324).
- CLASS 276.**—Surgical instruments and appliances, with dressings, apparatus for deformities, prothesis, obstetrical instruments.
- CLASS 277.**—Dental instruments and appliances.
- CLASS 278.**—Vehicles and appliances for the transportation of the sick and wounded, during peace and war, on shore or at sea.

**HARDWARE, EDGE TOOLS, CUTLERY, AND METALLIC PRODUCTS.**

- CLASS 280.**—Hand tools and instruments used by carpenters, joiners, and for wood and stone in general. Miscellaneous hand tools used in industries, such as jewellers', engravers'.
- CLASS 281.**—Cutlery, knives, penknives, scissors, razors, razor straps, skates, and implements sold by cutlers.
- CLASS 282.**—Emery and sand paper, polishing powders, polishing and burnishing stones.
- CLASS 283.**—Metal hollow ware, ornamental castings.
- CLASS 284.**—Hardware used in construction, exclusive of tools and implements. Spikes, nails, screws, tacks, bolts, locks, latches, hinges, pulleys. Plumbers' and gas fitters' hardware, furniture fittings, ships' hardware, saddlers' hardware, and harness fittings and trimmings.

**FABRICS OF VEGETABLE, ANIMAL, OR MINERAL MATERIALS.**

- CLASS 285.**—India rubber goods and manufactures.
- CLASS 286.**—Brushes.
- CLASS 287.**—Ropes, cordage.
- CLASS 288.**—Flags, insignia, emblems.
- CLASS 289.**—Wooden and basket ware, papier mache.
- CLASS 290.**—Undertakers' furnishing goods, etc.
- CLASS 291.**—Galvanized iron work.

**CARRIAGES, VEHICLES, AND ACCESSORIES.**

(For farm vehicles and railway carriages, see Departments of Agriculture and Machinery.)

- CLASS 292.**—Pleasure carriages.
- CLASS 293.**—Traveling carriages, coaches, stages, omnibuses, hearses, Bath chairs, velocipedes, baby coaches.
- CLASS 294.**—Vehicles for movement of goods and heavy objects, carts, wagons, trucks.
- CLASS 295.**—Sleighs, sledges, sleds, etc.
- CLASS 296.**—Carriage and horse furniture, harness and saddlery, whips, spurs, horse blankets, carriage robes, rugs, etc.



# CLASSIFICATION.

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## DEPARTMENT III.—EDUCATION AND SCIENCE.

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### EDUCATIONAL SYSTEMS, METHODS, AND LIBRARIES.

**Class 300.**—Elementary instruction. Infant schools and kindergartens, arrangements, furniture, appliances, and modes of training.

Public schools, graded schools, buildings and grounds, equipments, courses of study, methods of instruction, text-books, apparatus, including maps, charts, globes, etc.; pupils' work, including drawing and penmanship; provisions for physical training.

**Class 301.**—Higher education. Academies and high schools.

Colleges and universities. Buildings and grounds; libraries, museums of zoology, botany, mineralogy, art, and archeology; apparatus for illustration and research, mathematical, physical, chemical, and astronomical courses of study; text-books, catalogues, libraries, and gymnasiums.

**Class 302.**—Professional schools, theology, law, medicine, and surgery, dentistry, pharmacy, mining, engineering, agriculture, and mechanical arts, art and design, military schools, naval schools, normal schools, commercial schools, music.

Buildings, text-books, libraries, apparatus, methods, and other accessories for professional schools.

**Class 303.**—Institutions for instruction of the blind, deaf, and dumb, and the feeble-minded.

**Class 304.**—Education reports and statistics.

National bureau of education.

State, city, and town systems.

College, university, and professional systems.

**Class 305.**—Libraries, history, reports, statistics, and catalogues.

**Class 306.**—School and text-books, dictionaries, encyclopædias, gazetteers, directories, index volumes, bibliographies, catalogues, almanacs, special treatises, general and miscellaneous literature, newspapers, technical and special newspapers and journals, illustrated papers, periodical literature.

### INSTITUTIONS AND ORGANIZATIONS.

**Class 310.**—Institutions founded for the increase and diffusion of knowledge. Such as the Smithsonian Institution, the Royal Institution, the Institute of France, British Association for the Advancement of Science, and the American Association, etc., their organization, history, and results.

**Class 311.**—Learned and scientific associations. Geological and mineralogical societies, etc. Engineering, technical, and professional associations. Artistic, biological, zoological, medical schools, astronomical observatories.

**CLASS 312.**—Museums, collections, art galleries, exhibitions of works of art and industry. Agricultural fairs, state and county exhibitions, national exhibitions. International exhibitions.

Scientific museums and art museums.

Ethnological and archaeological collections.

**CLASS 313.**—Music and the drama.

#### SCIENTIFIC AND PHILOSOPHICAL INSTRUMENTS AND METHODS.

**CLASS 320.**—Instruments of precision, and apparatus of physical research, experiment, and illustration.

Astronomical instruments and accessories, used in observatories.

Transits, mural circles, equatorials, collimators.

Geodetic and surveying instruments. Transits, theodolites, needle compasses. Instruments for surveying underground in mines, tunnels, and excavations.

Nautical astronomical instruments. Sextants, quadrants, repeating circles, dip-sectors.

Leveling instruments and apparatus. Carpenters' and builders' levels, hand levels, water levels, engineers' levels.

Instruments for deep-sea sounding and hydrographic surveying.

Meteorological instruments and apparatus.

Thermometers, pyrometers.

Barometers.

Hygrometers and rain gauges.

Maps, bulletins.

Blanks for reports, methods of recording, reducing, and reporting observations.

**CLASS 321.**—Indicating and registering apparatus, other than meteorological; mechanical calculation.

Viameters, pedometers, perambulators.

Gas meters.

Water meters, current meters, ships' logs, electrical logs.

Tide registers.

Apparatus for printing consecutive numbers.

Counting machines, calculating engines, arithmometers.

**CLASS 322.**—Weights, measures, weighing and meteorological apparatus.

Measures of length; graduated scales on wood, metal, ivory, tape, or ribbon; steel tapes, chains, rods, verniers, rods, and graduated scales for measuring lumber, goods in packages, casks, etc., gaugers' tools and methods.

Measures of capacity for solids and liquids.

Weights. Scales and graduated beams for weighing; assay balances, chemical balances. Ordinary scales for heavy weights; weighing locomotives and trains of cars. Postal balances. Hydrometers, alchometers, lactometers, etc.; gravimeters. (*See Class 571.*)

**CLASS 323.**—Chronometric apparatus.

Chronometers. Astronomical clocks. Church and metropolitan clocks. Ordinary commercial clocks. Pendulums and spring clocks. Marine clocks. Watches. Clepsydras, hour glasses, sun dials. Chronographs, electrical clocks. Metronomes.

**CLASS 324.**—Optical and thermotic instruments and apparatus.

Mirrors, plane and spherical.

Lenses and prisms.

Spectacles and eyeglasses, field and opera glasses, graphoscopes and stereoscopes.

Cameras and photographic apparatus.

Microscopes.

Telescopes.

Apparatus for artificial illumination, including electric, oxyhydrogen, and magnesium light.

Stereopticons.

Photometric apparatus.

Spectroscopes and accessories for spectrum analysis.

Polariscopes, etc.

Thermotic apparatus.

**CLASS 325.—Electrical apparatus.**

Friction machines.

Condensers and miscellaneous apparatus to illustrate the discharge.

Galvanic batteries and accessories to illustrate dynamical electricity.

Electro-magnetic apparatus.

Induction machines, Runkorff coils, etc.

Magnets and magneto-electrical apparatus.

**CLASS 326.—Telegraphic instruments and methods.**

Batteries and forms of apparatus used in generating the electrical currents for telegraphic purposes.

Conductors and insulators, and methods of support, marine telegraph cables.

Apparatus of transmission; keys, office accessories, and apparatus.

Receiving instruments, relay magnets, local circuits.

Semaphoric and recording instruments.

Codes, signs, or signals.

Printing telegraphs for special uses.

Electrographs.

Dial or cadran systems.

Apparatus for automatic transmission.

**CLASS 327.—Musical instruments and acoustic apparatus.**

Percussion instruments, drums, tamborines, cymbals, triangles.

Pianos.

Stringed instruments other than pianos.

Automatic musical instruments, music boxes.

Wind instruments of metal and of wood.

Harmoniums.

Church organs and similar instruments.

Speaking machines.

Vocal music.

**ENGINEERING, ARCHITECTURE, CHARTS, MAPS, AND GRAPHIC REPRESENTATIONS.**

(For Agricultural Engineering, see Class 680.)

(For Mining Engineering, see Class 220.)

**CLASS 330.—Civil engineering. Land surveying, public lands, etc.**

River, harbor, and coast surveying. Construction and maintenance of roads, streets, pavements, etc. Surveys and location of towns and cities, with systems of water supply and drainage. Arched bridges of metal, stone, brick, or beton. Trussed girder bridges. Suspension bridges. Canals, aqueducts, reservoirs, construction of dams. Hydraulic engineering and means of arresting and controlling the flow of water.

Submarine constructions, foundations, piers, docks, etc.

**CLASS 331.**—Dynamic and industrial engineering. Construction and working of machines; examples of planning and construction of manufacturing and metallurgical establishments.

**CLASS 332.**—Railway engineering. Location of railways, and the construction and management of railways.

**CLASS 333.**—Military engineering.

**CLASS 334.**—Naval engineering.

**CLASS 335.**—Topographical map. Marine and coast charts.

Geological maps and sections.

Botanical, agronomical, and other maps, showing the extent and distribution of men, animals, and terrestrial products. Physical maps.

Meteorological maps and bulletins. Telegraphic routes and stations. Railway and route maps. Terrestrial and celestial globes. Relief maps and models of portions of the earth's surface. Profiles of ocean beds and routes of submarine cables.

#### PHYSICAL, SOCIAL, AND MORAL CONDITION OF MAN.

**CLASS 340.**—Physical development and condition.

The nursery and its accessories.

Gymnasiums, games, and manly sports. Skating, walking, climbing, ball-playing, acrobatic exercises; rowing, hunting, etc.

**CLASS 341.**—Alimentation. Markets; preparation and distribution of food.

**CLASS 342.**—The dwelling. Sanitary conditions and regulations. Domestic architecture.

Dwellings characterized by cheapness, combined with the conditions essential to health and comfort.

Fire-proof structures.

Hotels, club-houses, etc.

Public baths.

**CLASS 343.**—Commercial systems and appliances.

Mercantile forms and methods, counting-houses and offices.

Banks and banking.

Saving and trust institutions.

Insurance; fire, marine, life, etc.

Commercial organizations, boards of trade, merchants', produce, and stock exchanges.

Corporations for commercial and manufacturing purposes.

Railway and other transportation companies.

Building and loan associations.

**CLASS 344.**—Money. Mints and coining.

Collections of current coins.

Historical collections.

Tokens, etc.

Bank notes and other paper circulating mediums.

Commercial paper, bills of exchange, etc.

Securities for payment of money, stocks, bonds, mortgages, ground rents, quit rents.

Precautions against counterfeiting and misappropriation of money.

**CLASS 345.**—Government and law. Various systems of government.

Departments of government. Revenue and taxation, military organization, executive powers, legislative forms and authority, judicial functions and systems, police regulations, government charities.

International relations; international law; diplomatic and consular service, etc., allegiance and citizenship; naturalization.

Codes.

Municipal government.

Protection of property in inventions.

Postal system and appliances.

Punishment of crime.

Prisons and prison management and discipline; police stations; houses of correction; reform schools; naval or marine discipline; punishment at sea.

**CLASS 346.—Benevolence. General hospitals.**

Special hospitals for the eye and ear, for women, etc.

Hospitals for contagious and infectious diseases.

Hospitals for the insane—under State control, and private asylums.

Quarantine systems and organizations.

Sanitary regulations of cities.

Dispensaries.

Inebriate asylums.

Lying-in asylums.

Magdalen asylums.

Asylums for infants and children. Foundling and orphan asylums, children's aid societies.

Homes for the aged and infirm; homes for aged men and women; soldiers' homes; homes for the maimed and deformed; sailors' homes.

Treatment of paupers. Almshouses, feeding the poor, lodging houses.

Emigrant aid societies.

Treatment of aborigines.

Prevention of cruelty to animals.

**CLASS 347.—Co-operative associations.**

Political societies and organizations.

Military organizations and orders.

Trade unions and associations.

Industrial organizations.

Secret orders and fraternities.

**CLASS 348.—Religious organizations and systems. Origin, nature, growth, and extent of various religious systems and faiths. Statistical, historical, and other facts.**

Religious orders and societies, and their objects.

Societies and organizations for the propagation of systems of religion by missionary effort.

Spreading the knowledge of religious systems by publications.

Bible societies, tract societies, colportage.

Systems and methods of religious instruction and training for the young.

Sunday-schools, furniture and apparatus.

Associations for religious or moral improvement.

Dispensing charities, church guilds.

**CLASS 349.—Art and industrial exhibitions. Agricultural fairs, state and county exhibitions, national exhibitions, international exhibitions, international congresses, etc.**

# CLASSIFICATION.

## DEPARTMENT IV.—ART.

### SCULPTURE.

- CLASS 400.—Figures and groups in stone, metal, clay, or plaster.  
CLASS 401.—Bas-reliefs, in stone or metal; electrotype copies.  
CLASS 402.—Medals, pressed and engraved; electrotypes of medals.  
CLASS 403.—Hammered and wrought work—*repoussé* and *rehaussé* work, embossed and engraved relief work.  
CLASS 404.—Cameos, intaglios, engraved stones, dies, seals, etc.  
CLASS 405.—Carvings in wood, ivory, and metal.

### PAINTING.

- CLASS 410.—Paintings in oil on canvas, panels, etc.  
CLASS 411.—Water color pictures; aquarelles, miniatures, etc.  
CLASS 412.—Frescoes, cartoons for frescoes, etc.  
CLASS 413.—Painting with vitrifiable colors. Pictures on porcelain, enamel, and metal.

### ENGRAVING AND LITHOGRAPHY.

- CLASS 420.—Drawings with pen, pencil, or crayons.  
CLASS 421.—Line engravings from steel, copper, or stone.  
CLASS 422.—Wood engravings.  
CLASS 423.—Lithographs, zincographs, etc.  
CLASS 424.—Chromo-lithographs.

### PHOTOGRAPHY.

- CLASS 430.—Photographs on paper, metal, glass, wood, fabrics, or enamel surfaces.  
CLASS 431.—Prints from photo-relief plates, carbon prints, etc.  
CLASS 432.—Photo-lithographs, etc.  
CLASS 433.—Photographic apparatus and supplies.

### INDUSTRIAL AND ARCHITECTURAL DESIGNS, MODELS, AND DECORATIONS.

- CLASS 440.—Industrial designs.  
CLASS 441.—Architectural designs; studies and fragments, representations and projects of edifices; restorations from ruins and from documents.  
CLASS 442.—Decoration of interiors of buildings.  
CLASS 443.—Artistic hardware and trimmings, artistic castings, forged metal work for decoration, etc.

### DECORATION WITH CERAMIC AND VITREOUS MATERIALS, MOSAIC AND INLAID WORK.

- CLASS 450.—Mosaic and inlaid work in stone.  
CLASS 451.—Mosaic and inlaid work in tiles, tessaræ, glass, etc.  
CLASS 452.—Inlaid work in wood and metal, parquetry, tables, etc.  
CLASS 453.—Stained glass.  
CLASS 454.—Miscellaneous objects of art.

# CLASSIFICATION.

## DEPARTMENT V.—MACHINERY.

### MACHINES, TOOLS, AND APPARATUS OF MINING, METALLURGY, CHEMISTRY, AND THE EXTRACTIVE ARTS.

- CLASS 500.—Rock drilling.  
CLASS 501.—Well and shaft boring.  
CLASS 502.—Machines, apparatus, and implements for coal cutting.  
CLASS 503.—Hoisting machinery and accessories.  
CLASS 504.—Pumping, draining, and ventilating.  
CLASS 505.—Crushing, grinding, sorting, and dressing. Breakers, stamps, mills, pans, screens, sieves, jigs, concentrators.  
CLASS 506.—Furnaces, smelting apparatus, and accessories.  
CLASS 507.—Machinery used in Bessemer process.  
CLASS 508.—Chemical manufacturing machinery. Electroplating. Paint and powder mills. Blacking and soap-making machinery.  
CLASS 509.—Gas machinery and apparatus.

### MACHINES AND TOOLS FOR WORKING METAL, WOOD, AND STONE.

- CLASS 510.—Planing, sawing, veneering, grooving, mortising, tonguing, cutting, moulding, stamping, carving, and cask-making machines, etc., cork-cutting machines.  
CLASS 511.—Direct acting steam sawing machines, with gang saws. Bark mills.  
CLASS 512.—Rolling mills, bloom squeezers, blowing fans. Rivet, nail, bolt, and tack making machinery.  
CLASS 513.—Furnaces and apparatus for casting metals, with specimens of work.  
CLASS 514.—Steam, trip, and other hammers, with specimens of work, anvils, forges, bellows.  
CLASS 515.—Planing, drilling, slotting, turning, shaping, punching, stamping, cutting, and coining machines. Wheel cutting and dividing machines, emery wheels, drills, taps, gauges, dies, etc. Grindstones.  
CLASS 516.—Stone-sawing and planing machines, dressing, shaping, and polishing, sand blasts, Tilghman's machines, glass-grinding machines, etc.  
CLASS 517.—Brick, pottery, and tile machines. Machines for making artificial stone.  
CLASS 518.—Furnaces, moulds, blowpipes, etc., for making glass and glassware.  
CLASS 519.—Tools, implements, etc., for working metal, wood, and stone.

### MACHINES AND IMPLEMENTS OF SPINNING, WEAVING, FELTING, AND PAPER MAKING.

- CLASS 520.—Machines for the manufacture of silk goods.  
CLASS 521.—Machines for the manufacture of cotton goods.  
CLASS 522.—Machines for the manufacture of woollen goods, carpets, and tapestry.  
CLASS 523.—Machines for the manufacture of linen goods.

**CLASS 524.**—Machines for the manufacture of rope and twine, and miscellaneous fibrous materials.

**CLASS 525.**—Machines for the manufacture of paper and felting.

**CLASS 526.**—Machines for the manufacture of india-rubber goods.

**CLASS 527.**—Machines for the manufacture of mixed fabrics.

**CLASS 528.**—Machines for the manufacture of wire cloth.

**MACHINES, APPARATUS, AND IMPLEMENTS USED IN SEWING AND MAKING CLOTHING AND ORNAMENTAL OBJECTS.**

**CLASS 530.**—Machines used in the manufacture of lace, floor-cloths, fancy embroidery, hair, ribbons, etc.

**CLASS 531.**—Sewing and knitting machines, clothes, corset, hat, and bonnet making machines.

**CLASS 532.**—Machines for preparing and working leather.

**CLASS 533.**—Machines for making boots and shoes.

**CLASS 534.**—Machines for ironing, drying, scouring, and cleaning.

**CLASS 535.**—Machines for making clocks and watches.

**CLASS 536.**—Machines for making jewelry.

**CLASS 537.**—Machines for making buttons, pins, needles, etc.

**CLASS 538.**—Pipes for smoking.

**MACHINES AND APPARATUS FOR TYPESETTING, PRINTING, STAMPING, EMBOSSE-  
ING, AND FOR MAKING BOOKS, AND PAPER WORKING.**

**CLASS 540.**—Printing, stamping, embossing, and lithographing presses.

**CLASS 541.**—Typecasting machines, apparatus of stereotyping.

**CLASS 542.**—Types and typesetting machines. Type-writing machines.

**CLASS 543.**—Printers' furniture.

**CLASS 544.**—Bookbinding machines.

**CLASS 545.**—Paper-folding machines.

**CLASS 546.**—Paper and card cutting machines, paper box machines.

**CLASS 547.**—Envelope machines.

**MOTORS AND APPARATUS FOR THE GENERATION AND TRANSMISSION OF POWER.**

**CLASS 550.**—Boilers and all steam or gas generating apparatus for motive purposes.

**CLASS 551.**—Water-wheels, water engines, hydraulic rams, windmills.

**CLASS 552.**—Steam, air, or gas engines, electro-magnetic engines.

**CLASS 553.**—Apparatus for the transmission of power, shafting, belting, cables, transmission of power by compressed air, etc., gearing, cables.

**CLASS 554.**—Screw propellers, wheels for the propulsion of vessels, and other motors.

**CLASS 555.**—Implements and apparatus used in connection with motors. steam gauges, manometers, etc. Anti-friction metals.

**HYDRAULIC AND PNEUMATIC APPARATUS, PUMPING, HOISTING, AND LIFTING.**

**CLASS 560.**—Pumps and apparatus for lifting and moving liquids.

**CLASS 561.**—Pumps and apparatus for moving and compressing air or gas.

**CLASS 562.**—Pumps and blowing engines, blowers and ventilating apparatus.

**CLASS 563.**—Hydraulic jacks, presses, elevators, lifts, meters, cranes.

**CLASS 564.**—Fire engines, hand, steam, or chemical, and fire extinguishing apparatus, hose, ladders, and fire-escapes, etc.

**CLASS 565.**—Beer engines, soda-water machines, bottling apparatus, corking machines.

**CLASS 566.**—Stop valves, cocks, pipes, etc.

**CLASS 567.**—Diving apparatus and machinery.

**CLASS 568.**—Ice machines.

**RAILWAY PLANT, ROLLING STOCK, AND APPARATUS.**

**CLASS 570.**—Locomotives, models, drawings, plans, etc.

**CLASS 571.**—Carriages, wagons, trucks, cars, etc



- CLASS 57a.—Brakes, buffers, couplings, and snow-plows.
- CLASS 573.—Wheels, tires, axles, bearings, springs, etc.
- CLASS 574.—Permanent ways, ties, chairs, switches, etc.
- CLASS 575.—Station arrangements, signals, water-cranes, turn-tables.
- CLASS 576.—Miscellaneous locomotive attachments.
- CLASS 577.—Street railways and cars.

**MACHINES USED IN PREPARING AGRICULTURAL PRODUCTS.**

- CLASS 580.—Flour mills.
- CLASS 581.—Sugar refining machines.
- CLASS 582.—Confectioners' machinery.
- CLASS 583.—Oil-making machinery.
- CLASS 584.—Tobacco manufacturing machines.
- CLASS 585.—Mills for spices, coffee, etc.
- CLASS 586.—Machines for preparing fancy goods.
- CLASS 587.—Machines for preparing malt and spirituous liquors.

**AERIAL, PNEUMATIC, AND WATER TRANSPORTATION.**

- CLASS 590.—Suspended cable railways.
- CLASS 591.—Transporting cables.
- CLASS 592.—Balloons, flying machines, etc.
- CLASS 593.—Pneumatic railways, pneumatic dispatch.
- CLASS 594.—Boats and sailing vessels. Sailing vessels used in commerce. Sailing vessels used in war. Yachts and pleasure boats. Rowing boats of all kinds. Life boats and salvage apparatus, with life rafts, belts, etc. Submarine armor, diving bells, etc. Ice boats. Models and drawings.
- CLASS 595.—Steamships, steamboats, and all vessels propelled by steam.
- CLASS 596.—Vessels for carrying telegraph<sup>c</sup> cables and railway trains, also coal barges, water boats, and dredging machines, screw and floating docks, and for other special purposes.
- CLASS 597.—Steam capstans, windlass, deck-winches, and steering apparatus, fans.

**MACHINERY AND APPARATUS ESPECIALLY ADAPTED TO THE REQUIREMENTS OF THE EXHIBITION.**

Boilers, engines, cranes, pumps, etc.

# CLASSIFICATION.

## DEPARTMENT VI.—AGRICULTURE.

### ARBORICULTURE AND FOREST PRODUCTS.

- CLASS 600.**—Timber and trunks of trees, entire or in transverse or truncated sections, with specimens of barks, leaves, flowers, seed vessels, and seed.  
Masts, spars, knees, longitudinal sections of trees, railway ties, ship timber, lumber roughly sawn; as planks, shingles, lath, and staves.  
Timber and lumber prepared in various ways to resist decay and combustion; as by injection of salts of copper and zinc.
- CLASS 601.**—Ornamental woods used in decorating and for furniture; as veneers of mahogany, rosewood, ebony, walnut, maple, and madrona.
- CLASS 602.**—Dyewoods, barks, and galls for coloring and tanning.
- CLASS 603.**—Gums, resins, caoutchouc, gutta percha, vegetable wax.
- CLASS 604.**—Lichens, mosses, fungi, pulu, ferns.
- CLASS 605.**—Seeds, nuts, etc., for food and ornamental purposes.
- CLASS 606.**—Forestry.—Illustrations of the art of planting, managing, and protecting forests. Statistics.
- CLASS 607.**—Fruit trees and shrubs.

### POMOLOGY.

- CLASS 610.**—Fruits of temperate and semi-tropical regions; as apples, pears, quinces, peaches, nectarines, apricots, plums, grapes, cherries, strawberries, and melons.
- CLASS 611.**—Tropical fruits and nuts, oranges, bananas, plantains, lemons, pine-apples, pomegranates, figs, cocoanuts.

### AGRICULTURAL PRODUCTS.

- CLASS 620.**—Cereals, grasses, and forage plants.
- CLASS 621.**—Leguminous plants and esculent vegetables.
- CLASS 622.**—Roots and tubers.
- CLASS 623.**—Tobacco, hops, tea, coffee, spices, condiments, herbs.
- CLASS 624.**—Seeds and seed vessels.

### LAND ANIMALS.

- CLASS 630.**—Horses, asses, mules.
- CLASS 631.**—Horned cattle.
- CLASS 632.**—Sheep.
- CLASS 633.**—Goats, alpaca, llama, camel.
- CLASS 634.**—Swine.
- CLASS 635.**—Poultry and birds.
- CLASS 636.**—Dogs and cats.
- CLASS 637.**—Wild animals.
- CLASS 638.**—Insects, useful and injurious. Honey bees, cochineal, silk-worms.

## MARINE ANIMALS, FISH CULTURE, AND APPARATUS.

- CLASS 640.—Marine mammals.—Seals, cetaceans, etc., specimens living in aquaria, or stuffed, salted, preserved in alcohol, or otherwise.
- CLASS 641.—Fishes, living or preserved.
- CLASS 642.—Pickled fish, and parts of fish used for food.
- CLASS 643.—Crustaceans, echinoderms, beche de mer.
- CLASS 644.—Mollusks, oysters, clams, etc., used for food.
- CLASS 645.—Shells, corals, and pearls.
- CLASS 646.—Whalebone, shagreen, fish-glue, isinglass, sounds, fish-oil.
- CLASS 647.—Instruments and apparatus of fishing.—Nets, baskets, hooks, and other apparatus used in catching fish.
- CLASS 648.—Fish culture.—Aquaria, hatching pools, vessels for transporting roe and spawn, and other apparatus used in fish breeding, culture, or preservation.

## ANIMAL AND VEGETABLE PRODUCTS.

(Used as food or as materials.)

- CLASS 650.—Sponges, seaweed, and other growths used for food or in the arts.
- CLASS 651.—The dairy.—Milk, cream, butter, cheese.
- CLASS 652.—Hides, furs, and leather, tallow, oil, and lard, ivory, bone, horn, glue.
- CLASS 653.—Eggs, feathers, down.
- CLASS 654.—Honey and wax.
- CLASS 655.—Animal perfumes; as musk, civet, ambergris.
- CLASS 656.—Preserved meats, vegetables, and fruits. Dried, or in cans or jars.  
Meat and vegetable extracts.
- CLASS 657.—Flour; crushed and ground cereals, decorticated grains.
- CLASS 658.—Starch and similar products.
- CLASS 659.—Sugar and syrups.
- CLASS 660.—Wines, alcohol, and malt liquors.
- CLASS 661.—Bread, biscuits, crackers, cakes, confectionery, cocoa, chocolate, etc.
- CLASS 662.—Vegetable oils, oil cake.

## TEXTILE SUBSTANCES OF VEGETABLE OR ANIMAL ORIGIN.

- CLASS 665.—Cotton on the stem, in the boll, ginned, and baled.
- CLASS 666.—Hemp, flax, jute, ramie, etc., in primitive forms and in all stages of preparation for spinning.
- CLASS 667.—Wool in the fleece, carded, and in bales.
- CLASS 668.—Silk in the cocoon and reeled.
- CLASS 669.—Hair, bristles.

## MACHINES, IMPLEMENTS, AND PROCESSES OF MANUFACTURE.

- CLASS 670.—Tillage.—Manual implements, spades, hoes, rakes. Animal power machinery, plows, cultivators, horse-hoes, clod-crushers, rollers, harrows. Steam power machinery, plows, breakers, harrows, cultivators.
- CLASS 671.—Planting.—Manual implements, corn-planters and hand-drills. Animal power machinery, grain and manure drills, corn and cotton planters. Steam power machinery, grain and manure drills.
- CLASS 672.—Harvesting.—Manual implements; grain-cradles, sickles, reaping-hooks. Animal power machinery, reapers and headers. Mowers, tedders, rakes, hay elevators, and hay loaders.  
Potato diggers.
- CLASS 673.—Preparatory to marketing.—Thrashers, clover-hullers, corn-shellers, winnowers, hay, cotton, flax, jute, ramie, wine, oil, and sugar making apparatus. Cleaners and smutters. Horse powers.

**CLASS 674.**—Applicable to farm economy.—Portable and stationary engines, chaffers, hay and feed cutters, slicers, pulpers, corn mills, farm boilers and steamers, incubators, edged tools, mills, meat choppers.

**CLASS 675.**—Dairy fittings and appliances.—Churns for hand and power, butter-workers, cans and pails, cheese-presses, vats, and apparatus, ice-cream freezers, cedar-ware.

**AGRICULTURAL ENGINEERING AND ADMINISTRATION.**

**CLASS 680.**—Laying out and improving farms.—Clearing (stump extractors), construction of roads, draining, irrigating, models of fences, gates, drains, out-falls, dams, embankments, irrigating machinery, stack building and thatching.

**CLASS 681.**—Commercial fertilizers, phosphatic, ammoniacal, calcareous, etc.

**CLASS 682.**—Transportation.—Wagons, carts, sleds, harness, yokes, traction engines, and apparatus for road making and excavating.

**CLASS 683.**—Farm buildings.—Models and drawings of farm houses and tenements, barns, stables, hop-houses, fruit-driers, ice-houses, windmills, granaries, barracks, apiaries, cocooneries, aviaries, abattoirs, and dairies.

**TILLAGE AND GENERAL MANAGEMENT.**

**CLASS 690.**—Systems of planting and cultivation.

**CLASS 691.**—Systems of draining and application of manures.

**CLASS 692.**—Systems of breeding and stock feeding, training.

**CLASS 693.**—Veterinary surgery and appliances.

# CLASSIFICATION.

## DEPARTMENT VII.—HORTICULTURE

### ORNAMENTAL TREES, SHRUBS, AND FLOWERS.

- CLASS 700.—Ornamental trees and shrubs, evergreens.  
CLASS 701.—Herbaceous perennial plants.  
CLASS 702.—Bulbous and tuberous rooted plants.  
CLASS 703.—Decorative and ornamental foliage plants.  
CLASS 704.—Annuals and other soft-wooded plants, to be exhibited in successive periods during the season.  
CLASS 705.—Roses.  
CLASS 706.—Cactacea.  
CLASS 707.—Ferns, their management in the open air and in ferneries, warden cases, etc.  
CLASS 708.—New plants, with statement of their origin.  
CLASS 709.—Floral designs, etc.—Cut flowers, bouquets, preserved flowers, leaves, seaweeds. Illustrations of plants and flowers.—Materials for floral designs. Bouquet materials, bouquet holders, bouquet papers, models of fruits, vegetables, and flowers.

### HOTHOUSES, CONSERVATORIES, GRAPERIES, AND THEIR MANAGEMENT.

- CLASS 710.—Hothouse and conservatory plants.  
CLASS 711.—Fruit trees under glass.  
CLASS 712.—Orchids and parasitic plants.  
CLASS 713.—Forcing and propagation of plants.  
CLASS 714.—Aquatic plants under glass, or in aquaria, etc.  
CLASS 715.—Horticultural buildings, propagating houses, hotbeds, etc., and modes of heating them. Structures for propagating and forcing small fruits.  
CLASS 716.—Portable or movable orchard houses and graperies, without artificial heat. Frames, beds.

### GARDEN TOOLS, ACCESSORIES OF GARDENING.

- CLASS 720.—Tools and implements.—Machines for the transplanting of trees, shrubs, etc. Portable forcing pumps, for watering plants in greenhouses and methods of watering the garden and lawn.  
CLASS 721.—Receptacles for plants.—Flower pots, plant-boxes, tubs, fern cases, jardinières, etc. Window gardening. Plant and flower stands, ornate designs in iron, wood, and wire.  
CLASS 722.—Ornamental wirework, viz.: fences, gates, trellis bordering of flower beds, porches. Park seats, chairs, garden statuary, vases, fountains, etc. Designations, labels, numbers.

### GARDEN DESIGNING, CONSTRUCTION, AND MANAGEMENT.

- CLASS 730.—Laying out gardens.—Designs for the laying out of gardens, and the improvement of private residences. Designs for commercial gardens, nurseries, graperies. Designs for the parterre. Books on gardening.  
CLASS 731.—Treatment of water for ornamental purposes, cascades, fountains, reservoirs, lakes.  
CLASS 732.—Formation and after-treatment of lawns.  
CLASS 733.—Garden construction, buildings, etc.—Rockwork, grottoes. Rustic constructions and adornments for private gardens and public grounds.  
CLASS 734.—Planting, fertilizing, and cultivating.



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**THE FINEST CIGAR**  
 (At six for 25 cents)  
**IN THE UNITED STATES,**  
**THE "AROMA,"**  
 FROM  
**THE UNITED STATES CIGAR MANUFACTORY,**  
 Office, S. W. cor. Fifteenth and Vine Sts.,  
 PHILADELPHIA.

**MAGIC LANTERNS.**  
 STEREO-PANOPTICONS-ARTOPTICONS. 10000 SLIDES ALWAYS ON HAND.  
 ILLUSTRATING EVERY SECTION OF THE GLOBE AND ALL THE ARTS AND  
 SCIENCES. THE ARTOPTICON IS THE BEST LANTERN, WITH A  
 BRILLIANT COAL OIL LAMP, SUITABLE FOR HOME, SUNDAY SCHOOLS  
 AND LECTURERS. ILLUSTRATED CATALOGUES FREE.  
 W. Y. McALLISTER 728 CHESTNUT ST. PHILA. PA.

**TWENTY-EIGHTH ANNUAL REPORT OF**  
**THE PENN MUTUAL LIFE INSURANCE CO.**

OFFICE, 921 CHESTNUT STREET, PHILADELPHIA.

**ASSETS, JAN. 1st, 1876.**

United States bonds, Philadelphia and other stocks and loans, - - -	\$1,770,477 50
Mortgages and ground rents upon property appraised at \$5,334,200, all first liens, - - -	1,971,308 84
Real estate owned by Co., - - -	349,126 53
Premium notes and loans secured by collateral, - - -	853,670 13
Cash on hand and in trust companies, - - -	191,916 62
Scrip dividends held by Co., - - -	113,030 00
Balance in hand of agents, - - -	17,253 48
All other securities, - - -	236,846 14
	<b>\$5,304,329 24</b>

**LIABILITIES.**

Losses reported, but not yet due, - - -	\$30,000 00
Reserve at 4 per cent interest, required to insure outstanding risks, - - -	4,553,176 00
Scrip yet outstanding, - - -	113,030 00
	<b>4,796,176 00</b>
Surplus to policy holders, 4 per cent. basis, - - -	747,891 24
Surplus to policy holders, 4 1/2 per cent. basis, - - -	1,268,092 24
Total number of policies issued in 1875, - - -	2,093
Policies in force Jan. 1, 1876, - - -	9,545
Amount at risk, - - -	<b>\$28,389,393 00</b>

**SAMUEL C. HUEY, President,**  
**H. S. STEPHENS, Second Vice-President.**  
**HENRY AUSTIE, Secretary.**

**SAMUEL E. STOKES, Vice-President.**  
**JAMES WEIR MASON, Actuary.**



**HASELTINE GALLERIES,**  
 1125 and 1127 Chestnut St., Philadelphia.



## DEPT. I.—MINING AND METALLURGY.

## UNITED STATES.

## Minerals, Ores.

## Minerals, Ores, Stone, Mining Products.

- 1 Cambria Iron & Steel Co., Johnstown, Pa. W 66.
- 2 Carbonate, fossil, and hematite ores from Johnstown, Frankstown, Marklesburg, Yellow Creek, Henrietta, and Springfield mines; specular, magnetic, red hematite, Lake Superior, and Lake Champlain ores; magnetiferous iron Mountain ores. 100
- 3 B, C, D, and E coal from Johnstown and Remington mines; Belgian oven and pit coke. 101
- 4 Lime and ganister from near Hollidaysburg, Henrietta, and Ganister mines. 103
- 5 Wharton, Joseph, Camden, N. J.—Nickel ore. T 63. 100
- 6 Sharswood, Wm., Philadelphia, Pa.—T 70. 100
- 7 Magnetic iron ore from the Moratuc Furnace mines, Danbury, N. C.; ores and minerals from North Carolina. 100
- 8 Coal from North Carolina. 101
- 9 Marble from North Carolina. 102
- 10 Scatite, agalmatolite, etc. from North Carolina. 104
- 11 Hatch, John, San Francisco, Cal.—Minerals of the Pacific states and territories, Mexico, Central and South America, China, Japan, etc. T 67. 100
- 12 Barten, Chas., Philadelphia, Pa.—Ores from "Blazing Star" silver mine, Colorado. T 71. 100
- 13 Adams, J. Howe, Philadelphia, Pa.—Ore from "Blue Jacket" silver mine, Montana district, Colorado. T 71. 100
- 14 Benton, Caroline C., Philadelphia, Pa.—Iron ores from St. Lawrence and Lewis counties, N. Y. T 67. 100
- 15 Foote, A. E., M.D., 3725 Lancaster avenue, Philadelphia, Pa.—Collection of minerals; elementary collection of minerals for students illustrating principal species; all grand divisions in Dana; every chemical element; every system of crystallization; trimorphism, 100 specimens, averaging four square inches, mostly crystallized, printed label of species, composition, locality attached—\$10.00; crystallized amazon stone, feldspar, quartz, Brookite, rutile rosettes, perovskite, hodotetanite (new mineral, Koenig), schorlomite, samarskite, tellurides, copper, hexagonal graphite, embolite, segnerite, oarukite, chlorastrolite, wavellite, peganite, etc. T 71. 100
- 16 Cleveland Rolling Mill Co., Cleveland, Ohio.—Ores. T 60. 100
- 17 Wyoming Historical & Geological Society, Wilkesbarre, Pa.—Fossils from the anthracite coal measures of Wyoming Valley, Pa. T 70. 100
- 18 Cook, Isaac, St. Louis, Mo.—Lead ores from Washington county, Mo. T 68. 100
- 19 Port Henry Iron Ore Co., J. B. Brinsmade, Treasurer, 56 Broadway, New York, N. Y.—Magnetic iron ores, "Twenty-one," puddling, and furnace ore; "Fisher" Bessemer ore. T 71. 100
- 20 Witherbees, Sherman, & Co., Port Henry, Essex County, N. Y.—Old bed puddling and furnace ore, and new bed Bessemer ore. T 71. 100
- 21 Black Band Iron Co., Marietta, O.—Black band, red hematite, and other iron ores. V 63. 100
- 22 Brown & Co., Wayne Iron & Steel Works, Pittsburg, Pa.—Ores. T 62. 100
- 23 Lucy Furnace Co., Pittsburg, Pa.—Iron ores. T 66. 100
- 24 Providence Franklin Society, Providence, R. I.—Minerals and geological specimens from Rhode Island. T 70. 100
- 25 Lombard, Thos. C., New York, N. Y.—Galena from Tudor mine, Hastings county, Ont. T 71. 100
- 26 Hussey & Howe Mining Co., Plattsburg, N. Y.—Blue magnetic iron ore (maritite); black magnetic iron ore. T 69. 100
- 27 Alexander, John B., Philadelphia, Pa.—Collection of minerals. P 68. 100
- 28 Passaic Zinc Co., Passaic, N. J.—Zinc ores. T 63. 100
- 29 Magnetite Iron Co., Philadelphia, Pa.—Bessemer ores; minerals from Carter county, Tenn. T 69. 100
- 30 Crab Orchard Iron Co., Philadelphia, Pa.—Magnetic Bessemer iron ores from Crab Orchard, Tenn. T 69. 100
- 31 Herr, Jos. C., Philadelphia, Pa.—Hematite iron ores, manganese, and baryta from French Broad River, Cocke county, Tenn. T 69. 100
- 32 Davis, O. W., Jr., Bangor, Maine.—Katahdin ores (limonite). T 69. 100
- 33 Fleming, F. N. & J. S., Goochland C. H., Va.—T 68. 100
- 34 Minerals, especially gold ores. 100
- 35 Mineral waters. 107
- 36 Thomas Iron Co., Hokendauqua, Pa.—Iron ore. T 64. 100
- 37 Lehigh Zinc Co., Bethlehem, Pa.—Zinc ores and minerals from zinc mines. T 64. 100

## Minerals, Ores.

- 29 Virginia Mineral Bureau, Alexandria, Va.—Collection of minerals of Virginia and West Virginia. X 62. 100
- 30 Stockbridge Iron Co., New Bedford, Mass.—Iron ore from West Stockbridge and Richmond, Mass. T 70. 100
- 31 Dexter & Co., New York, N. Y.—Mica from North Carolina. T 72. 100
- 32 Minong Mining Co., Detroit, Mich.—Native copper, etc. V 67. 100
- 33 Shalter, R. M., Carrick Furnace, Franklin county, Pa.—Iron ore. T 63. 100
- 34 Shelby Iron Co., Shelby Iron Works, Ala.—Iron ores. T 71. 100
- 35 Rockhill Iron & Coal Co., Philadelphia, Pa.—T 72 and Y 56. 100  
a Iron ores. 100  
b Semi-anthracite coal; coke. 101
- 36 Tecumseh Iron Co., Tecumseh, Ala. Willard Warner, President and Manager; A. E. Buck, Treasurer, Atlanta, Ga.—Pig iron, iron ore, charcoal, limestone. T 70. 100
- 36a Smith, J. C., Chicago, Ill.—Minerals of Jo Daviess county. V 72. 100
- 37 New River Railroad, Mining, & Manufacturing Co. of Virginia, Philadelphia, Pa.—Iron ores and other minerals. T 50. 100
- 37a Cosgriff, A., Tilly Foster Iron Mines, N. Y.—Magnetic iron ore. Y 62. 100
- 37b South & North Alabama Railroad, Montgomery, Ala.—Y 60 and T, 57. 100  
a Iron ore and minerals. 100  
b Coal and coke. 101
- 38 Lackawanna Iron & Coal Co., Scranton, Pa.—Iron ores. T 63. 100
- 39 Carpenter, Charles, Kelley's Island, Ohio.—Geological rocks. V 63. 100
- 40 Lake Superior Iron Co., Marquette county, Mich.—Iron ore. T 70. 100
- 41 Kentucky Geological Survey.—Collection illustrating the geology and mineral resources of Kentucky. X 65. 100
- 42 Allen, Oliver, Mumford, N. Y.—Petrified wood, leaves, ferns, etc., found on his premises. T 72. 100
- 43 Vesuvius Furnace, Etna Iron Works, Ironton, Ohio.—Iron ore. T 68. 100
- 44 Etna Furnace, Etna Iron Co., Hanging Rock, Ohio.—Iron ore. T 68. 100
- 45 Blanche Furnace, Etna Iron Works, Ironton, Ohio.—Iron ores. T 68. 100
- 46 Hecla Iron & Mining Co., John Campbell, President, Ironton, O.—Iron ores. T 68. 100
- 47 Monitor Furnace Co., Ironton, O.—Iron ores. T 68. 100
- 48 Grant Furnace, W. D. Kelley & Sons, Ironton, O.—Iron ores. T 68. 100
- 49 Center Furnace, W. D. Kelley & Sons, Ironton, O.—Iron ores. T 68. 100
- 49a Pennsylvania Geological Survey (by John B. Pease).—Scientific collection of rocks, minerals, models, and maps illustrating the geology of Pennsylvania. V 70. 100
- 50 Howard Furnace, Charcoal Iron Co., Ironton, O.—Iron ores. T 68. 100
- 50a Benton, Lewis F., Antwerp, N. Y.—Lead ore. T 70. 100
- 51 Buckhora Furnace, Charcoal Iron Co., Ironton, O.—Iron ores. T 68. 100
- 52 Olive Furnace, Campbell, McGugin, & Co., Ironton, O.—Iron ores. T 68. 100
- 53 Lawrence Furnace Co., Ironton, O.—Iron ores. T 68. 100
- 53a Ward, L. B., Niles, O.—V 61 to 63. 100  
a Iron ore. 100  
b Coal. 101
- 54 Pine Grove Furnace, Means, Kyle, & Co., Hanging Rock, O.—Iron ores. T 68. 100
- 55 Ohio Furnace, Means, Kyle, & Co., Hanging Rock, O.—Iron ores. T 68. 100
- 56 Washington Furnace, Union Iron Co., Portsmouth, O.—Iron ores. T 68. 100
- 56a Chaffin, Staples, & Co., Richmond, Va.—Ores. T 56. 100
- 57 Scioto Furnace, L. C. Robinson & Co., Portsmouth, O.—Iron ores. T 68. 100
- 58 Bloom Furnace, John Paul & Co., Portsmouth, O.—Iron ores. T 68. 100
- 59 Clinton Furnace, W. I. Ball, Wheelersburg, O.—Iron ores. T 68. 100
- 59a Selma & Alabama Railroad, Montgomery, Ala.—Y 60. 100  
a Iron ore. 100  
b Section of coal-beds. 101
- 60 Buckeye Furnace Co., Jackson, O.—Iron ores. T 68. 100
- 61 Cambria Furnace, D. Lewis & Co., Samsonville, O.—Iron ores. T 68. 100
- 62 Jackson Furnace, L. P. N. Smith's Heirs, Sciotoville, O.—Iron ores. T 68. 100
- 62a Walks, Jno. G., Fulton, Ark.—Sulphate of antimony and argentiferous galena. N 55. 100
- 63 Jefferson Furnace Co., Oak Hill, O.—Iron ores. T 68. 100
- 64 Orange Furnace, Orange Iron Co., Jackson, O.—Iron ores. T 68. 100
- 65 Star Furnace Co., Jackson, O.—Iron ores. T 68. 100
- 66 Huron Furnace, Huron Iron Co., Jackson, O.—Iron ores. T 68. 100
- 67 Tropic Furnace Co., Jackson, O.—Iron ores. T 68. 100
- 68 Globe Furnace, Globe Iron Co., Jackson, O.—Iron ores. T 68. 100
- 69 Fulton Furnace, Globe Iron Co., Jackson, O.—Iron ores. T 68. 100
- 69a Liking Iron Co., Newark, O.—V 63. 100  
a Iron ore. 100  
b Coal. 101  
c Flux and slag. 103
- 70 Wellston Twin Furnaces, Wellston Coal & Iron Co., Wellston, O.—Iron ores. T 68. 100
- 70a Hannibal & St. Joseph Railroad, Hannibal, Mo.—Minerals, etc. from the line of the road. V 65. 100
- 70b St. Louis & Iron Mountain Railroad, St. Louis, Mo.—Minerals, etc. from the line of the road. T 60. 100
- 71 Lincoln Furnace, I. M. McGhee's Estate, Rud's Mills, O.—Iron ores. T 68. 100
- 72 Richland Furnace Co., Richland P. O., O.—Iron ores. T 68. 100

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Minerals, Ores, Stone.

- 73 Eagle Furnace, L. C. Damarin & Co.,  
Rud's Mills, O.—Iron ores. T 68. 100
- 74 Hope Furnace, L. C. Damarin & Co.,  
Portsmouth, O.—Iron ores. T 68. 100
- 75 Hamden Furnace, L. C. Damarin &  
Co., Portsmouth, O.—Iron ores. T 68. 100
- 76a Marietta, Pittsburg, & Cleveland  
Railway, Marietta, O.—Minerals and  
ores. V 63. 100
- 76 Vinton Furnace, Bancroft, Rader, &  
Co., Vinton Station, O.—Iron ores. 100
- 77 Keystone Furnace Co., Portsmouth,  
O.—Iron ores. T 68. 100
- 78 Monroe Furnace, Union Iron Co.,  
Portsmouth, O.—Iron ores. T 68. 100
- 79 Latrobe Furnace, Bundy & Cobb,  
Berlin Cross Roads, O.—Iron ores. T  
68. 100
- 79a Barnes, Lewis, Philadelphia, Pa.—  
Manganiferous iron ore, from Warren  
county, N. J. T 50. 100
- 80 Logan Furnace Co., Logan county,  
O.—Iron ores. T 68. 100
- 81 Union Furnace, Brooks & Hueston,  
Haydensville, O.—Iron ores. T 68. 100
- 82 Mount Savage Furnace, Lexington  
& Carter county Mining & Manufactur-  
ing Co., Lexington, Ky.—Iron ores. T 68.  
100
- 83 Buffalo Furnace, Culbertson, Ear-  
hart, & Co., Greenupburg, Ky.—Iron  
ores. T 68. 100
- 84 Hunnewell Furnace, Eastern Ken-  
tucky Railway Co., Riverton, Ky.—Iron  
ores. T 68. 100
- 85 Pennsylvania Furnace, Eastern Ken-  
tucky Railway Co., Riverton, Ky.—Iron  
ores. T 68. 100
- 86 Charlotte Furnace Co., Riverton,  
Ky.—Iron ores. T 68. 100
- 87 Laurel Furnace, Robt. Scott & Co.,  
Riverton, Ky.—Iron ores. T 68. 100
- 88 Gallia Furnace, Norton, Campbell, &  
Co., Portsmouth, O.—Iron ores. T 68. 100
- 88a Iowa, State of.—Minerals, ores, etc.  
of Iowa. V 59. 100
- 89 Raccoon Furnace, Raccoon Mining  
& Manufacturing Co., Riverton, Ky.—  
Iron ores. T 68. 100
- 90 Tygart's Valley Mining Co., River-  
ton, Ky.—Section of iron ore. T 68. 100
- 90a Chester Iron Co., Chester, N. J.—  
Iron ore. T 64. 100
- 91 Bellefonte Furnace, Means, Russell,  
& Means, Ashland, Ky.—Iron ores. T  
68. 100
- 92 Buena Vista Furnace, Means & Co.,  
Ashland, Ky.—Iron ores. T 68. 100
- 93 Trigg Furnace, D. Hillman & Sons,  
Empire Iron Works, Ky.—Iron ores. T  
68. 100
- 93a Lowe, S. B., Chattanooga, Tenn.—  
Ores. X 63. 100
- 94 Center Furnace, D. Hillman & Sons,  
Empire Iron Works, Ky.—Iron ores. T  
68. 100
- 96 Hanging Rock Iron Region, Iron-  
ton, O.—Iron ores. T 68. 100
- 97 Traber & Aubery, Cincinnati, O.—  
Iron ores from twenty-five states and ter-  
ritories. T 68. 100
- 98 Borden, William W., New Provi-  
dence, Ind.—Fossils of Clark county,  
Ind., and stone. X 60. 100
- 99 Cooper, Hewitt, & Co., New York,  
N. Y. T 66.  
a Iron ores. 100  
b Fuels. 101
- 100 Ohio Coal Co., Marietta, O.—V 63.  
a Coal. 100  
b Coke. 101
- 101 Rhodes & Co., Cleveland, O.—V 61  
to 63.  
a Lake Superior iron ores. 100  
b Massillon, Ohio, coals. 101
- 102 Peplar Creek Mineral Railroad Co.,  
Philadelphia, Pa.—T 63.  
a Iron ores, etc., from Anderson county,  
Tenn. 100  
b Coal from Anderson county, Tenn. 101
- 103 Durham Iron Co., Riegelsville, Pa.  
—T 64.  
a Ores. 100  
b Fuel. 101
- 104 Glendon Iron Co., Easton, Pa.—T  
64.  
a Iron ores. 100  
b Fuel. 101
- 105 Mahoning Valley Centennial Asso-  
ciation, Youngstown, O.—V 63.  
a Ores. 100  
b Coal. 101  
c Limestone. 103
- 106 Bye, E. Mortimer, Wilmington,  
Del.  
a Iron ore. (Titaniferous magnetic.) *Chrome  
ore.* (Rock and sand.) 100  
b Maryland "verde antique" marble (sep-  
entine), various shades of green, hand-  
somerly blended; takes a brilliant polish,  
does not fade or weather, and is adapted  
for all kinds of ornamental work. T 70.  
102
- 107 Northampton Furnace, worked by  
the Bethlehem Iron Co., Bethlehem, Pa.  
—T 64.  
a Iron ores. 100  
b Fuel. 101
- 108 Lehigh Iron Co., Allentown, Pa.  
—T 64.  
a Iron ore. 100  
b Coal. 101
- 109 Emaus Iron Co., Allentown, Pa.  
—T 64.  
a Iron ore. 100  
b Fuel. 101
- 111 Allentown Rolling Mill Co., Allen-  
town, Pa.—T 64.  
a Ores. 100  
b Fuel. 101
- 112 Carbon Iron Co., Parryville, Pa.  
—T 64.  
a Iron ore. 100  
b Fuel. 101
- 113 Philadelphia and Reading Coal and  
Iron Co., Philadelphia, Pa.—T 72 and Y  
56.  
a Iron ores. 100  
b Coals for smelting and steam purposes. 101
- 114 Grand Tower Mining, Manufac-  
turing, and Transportation Co., Grand  
Tower, Ill.—T 68.  
a Ores. 100  
b Fuel. 101

## Minerals, Ores, Stone.

<b>115 Ironton Furnace Iron &amp; Steel Co.,</b> Ironton, O.—T 68.		<b>129 Crane Iron Co., Catasauqua, Pa.</b> —T 64.	
a Iron ores.	100	a Hematite and magnetic iron ores.	100
b Bituminous coal.	101	b Fuel.	101
<b>116 Belfont Furnace, Belfont Iron</b> <b>Works, Ironton, O.—T 68.</b>		c Limestone.	103
a Iron ores.	100	<b>130a Chattanooga Mineral District,</b> Chattanooga, Tenn.—X 63.	
b Bituminous coals.	101	a Iron and copper ores; gold quartz.	100
<b>117 Ophir Furnace Co., Jackson, O.—T</b> <b>68.</b>		b Coal.	101
a Iron ores.	100	c Marble.	102
b Jackson county stone coal.	101	<b>131 Lehigh Valley Iron Co., Copley, Pa.</b> —T 64.	
<b>118 Norton Iron Works, Ashland, Ky.</b> —T 68.		a Hematite and magnetic ore.	100
a Iron ores.	100	b Fuel.	101
b Coals and coke.	101	c Limestone.	103
<b>119 Ashland Furnace, Lexington &amp;</b> <b>Big Sandy Railroad Co., Ashland, Ky.</b> —T 68.		<b>132 Ohlton Coal Co., Youngstown, O.</b> —V 63.	
a Iron ores.	100	a Black band ore mixed with coal.	100
b Coals.	101	b Mineral Ridge coal.	101
<b>120 Powel, Robert Hare, &amp; Co., 424</b> Walnut street, Philadelphia, Pa.—X 54.		<b>132a Glasgow &amp; Port Washington Iron</b> <b>&amp; Coal Co., Port Washington, O.—V 61</b> <b>and W 64.</b>	
a Iron ores.	100	a Ores.	100
b Semi-bituminous and gas coals, from the Powelton estate, Pennsylvania.	101	b Coal.	101
<b>121 Union Iron Co. of Buffalo, Buffalo,</b> N. Y.—T 64 and U 60 outside.		<b>133 Alice Furnace, Etna Iron Works,</b> Hanging Rock, Ohio.—T 68.	
a Iron ores.	100	a Iron ores.	100
b Limestone.	103	b Bituminous coal and coke.	101
<b>122 Woodstock Iron Co., Anniston,</b> Ala.—T 63.		c Limestone.	103
a Iron and manganese ores.	100	<b>133a Coleraine Iron Co., Northampton</b> county, Pa.—T 64.	
b Limestone.	103	a Iron ore.	100
<b>123 Saucan Iron Co., Hellertown, Pa.</b> —T 64.		b Coal.	101
a Hematite and magnetic ore.	100	<b>134 Hanging Rock Iron Region Fur-</b> <b>naces, Charles Campbell, Commissioner,</b> Ironton, O.—T 69.	
b Limestone.	103	a Iron ores.	100
<b>123a Selma, Rome, &amp; Dalton Rail-</b> <b>road (by S. W. Baird), Cincinnati, O.—X</b> <b>64.</b>		b Cinders, bituminous coals.	101
a Copper and iron ores.	100	c Limestone.	103
b Coal.	101	d Fire clay.	104
c Slate, marble, and limestone.	102	<b>135 Tuscarawas Coal &amp; Iron Co., Clevel-</b> land, O.—T 71.	
d Fire clay.	104	a Iron ores.	100
<b>124 Andrews, Hitchcock, &amp; Co., Clevel-</b> land, O.—V 61 to 64.		b Coal.	101
a Lake Superior iron ores.	100	c Limestone.	103
b Brier Hill coal.	101	d Sand, fire clay.	104
c Limestone.	103	<b>136 Mount Vernon Furnace, Hiram</b> Campbell & Sons, Ironton, O.—T 68.	
<b>125 Duncan, John W., Philadelphia,</b> Pa.—T 72.		a Iron ores.	100
a Iron ores.	100	b Bituminous coals.	101
b Clays.	104	c Limestone.	103
<b>126 Fern Steel &amp; Iron Co., Clinton-</b> ville, N. Y.—T 63.		d Fire clay.	104
a Iron ore.	100	<b>137 Milton Furnace &amp; Coal Co., Wells-</b> ton, O.—T 68.	
b Graphite ore.	105	a Iron ores.	100
<b>127 Thomas, W. H. B., Mount Holly,</b> N. J.—T 68.		b Coals.	101
a Minerals.	100	c Limestone.	103
b Marls for fertilizing purposes; mineral waters from New Jersey.	107	d Fire clay.	104
<b>127a Brooke, E. &amp; G., Birdsboro', Pa.</b> —T 67.		<b>138 Huntingdon &amp; Broad Top Rail-</b> <b>road Co., Philadelphia, Pa.—V 56.</b>	
a Magnetic and hematite iron ores.	100	a Iron ores.	100
b Anthracite coal.	101	b Coal.	101
<b>128 Myers, A. J., Shenandoah Alum</b> Springs, Va.—T 67.		c Limestones.	103
a Minerals, ores.	100	d Fire clays.	104
b Mineral spring waters, chalybeate, iron, and sulphur waters.	107	<b>139 State of Wisconsin.—V 60.</b>	
<b>128a Andover Iron Co., Phillipsburg,</b> N. J.—T 64.		a Minerals, soils, etc.	100
a Iron ores.	100	b Building stone.	102
b Coal.	101	c Sands, gravel.	104
c Limestone and slags.	103	<b>140 State of Ohio (by F. W. Green).—V</b> 61 to 63.	
		a Minerals, ores.	100
		b Stone.	102
		c Clay, etc.	104

## Minerals, Ores, Coal.

- 141 State of New Jersey** (by Geo. H. Cook, State Geologist, New Brunswick, N. J.).—T 70.  
*a* Iron, zinc, and copper ores; minerals, geological suite. 100  
*b* Building stones. 102  
*c* Clays and sands. 104  
*d* Fertilizers. 107
- 142 State of Indiana** (by E. T. Cox, State Geologist).—V 58.  
*a* Hydrated brown oxide iron ores. 100  
*b* Bituminous and cannel coal from various mines. 101  
*c* Marble of various colors, oolitic building stone, limestone, sandstone, limestone flags, hydraulic stone. 102  
*d* Hydraulic cement, caustic lime. 103  
*e* Fire, white porcelain, and potters' clay; sand. 104
- 143 State of Michigan** (Jay A. Hubbell, Houghton, Mich., Superintendent of Mineral Department).—V 67.  
*a* Minerals, ores, geological collections, etc. 100  
*b* Bituminous and cannel coal. 101  
*c* Hewn, sawed, and polished building stone, marbles, and slates. 102  
*d* Lime and cement. 103  
*e* Clays and silex for glass manufacturers; sandstone, etc. 104  
*f* Mineral waters, natural brines, gypsum, marls, etc. 107
- 144 State of Delaware** (by J. P. Comegys, Dover, Del.).—V 55.  
*a* Iron ore. 100  
*b* Building stone. 102  
*c* Clays. 104  
*d* Natural woods. 600  
*e* Fruits. 610  
*f* Cereals. 620  
*g* Peas, beans, potatoes, turnips. 621
- 145 State of Missouri** (collective exhibit, by Thos. Allen, President State Board Centennial Managers, St. Louis, Mo.).—V 65 and T 60.  
*a* Iron, lead, zinc, copper, and nickel ores, barytes, feldspar, and soils. 100  
*b* Coal. 101  
*c* Stone. 102  
*d* Clays, sand, ochres, and kaolin. 104  
*e* Tripoli. 106  
*f* Peanuts. 605  
*g* Wheat, rye, oats, barley, and corn. 620  
*h* White beans and black-eyed peas. 621  
*i* Millet. 624  
*j* Cotton. 665  
*k* Flax and hemp. 666  
*l* Wool. 667  
*m* Silk. 668
- 146 Cochran, John M., & Co., Bradford, Pa.**—Connellsville bituminous coal and coke. T 56. 101
- 147 Foster Coal Co., Youngstown, O.**—Coal. V 63. 101
- 148 Kittaning Coal Co., 125 South Fourth street, Philadelphia, Pa.**—Clear-field bituminous coal, for steam and manufacturing purposes. Y 56 and T 72. 101
- 149 Westmoreland Coal Co., 230 South Third street, Philadelphia, Pa.**—Bituminous coal from the Pittsburg seam, for manufacture of gas and iron, and for locomotive fuel. Y 58. 101
- 149a Warwick, John G., Massillon, O.**—Coal from Warmington mines. V 63. 101
- 150 Penn Gas Coal Co., Westmoreland county, Pa.**—Section of bituminous coal vein. T 72 and Y 56. 101
- 150a Sparks, Westwater, & Co., Columbus, O.**—Coal from Muskingum county. V 63. 101
- 151 Van Winkle, Stout, & Co., New York, N. Y.**—Anthracite coal from Eber-vale, Pa. W 53. 101
- 152 Kyle Coal Co., Youngstown, O.**—Coal. V 63. 101
- 153 Linderman, G. B., Bethlehem, Pa.**—Anthracite coal. T 64. 101
- 154 Newton, Jotham, New York, N. Y.**—Composition fuel made of coal-dust. T 57. 101
- 155 Union Mining Co., of Alleghany county, Md.**—Coal. X 58. 101
- 155a Stoner, Hitchman, & Co., Mt. Pleasant, Pa.**—Coal and coke. X 57. 100
- 156 Anthracite Fuel Co., Rondout, N. Y.**—Pressed anthracite coal. Y 54. 101
- 156a Hutchinson, A. A., & Bro., Pitts-burg, Pa.**—Coke. X 56. 101
- 157 Hickory Coal Co., Pottsville, Pa.**—Samples of coal. W 55. 101
- 158 Harleigh Coal Co., Philadelphia, Pa.**—Samples of coal. W 55. 101
- 158a Lawton, Burnett, & Co., East Pal-estine, Ohio.**—Bituminous coal, from Col-umbia county, O. V 61 to 63. 101
- 158b Draper, John W., Pottsville, Pa.**—Anthracite coal. W 56. 101
- 159 Excelsior Coal Mining Co., Phila-delphia, Pa.**—Samples of coal. W 55. 101
- 160 Garretson, Theodore, Philadelphia, Pa.**—Coal from the Girard colliery. W 55. 101
- 161 Wadsworth Coal Co., Akron, O.**—Coal from Medina county, O. V 63. 101
- 162 Blauvelt, Jas. C., Marietta, O.**—Bituminous coal from Marietta Run, Ohio. V 61 to 64. 101
- 162a Hurd Coal & Iron Co., Columbus, O.**—Bituminous coal from Perry county, O. V 63. 101
- 163 Lexington & Carter county Mining & Manufacturing Co., Lexington, Ky.**—Section of bituminous coal. T 68. 101
- 163a Church Hill Coal Co., Youngs-town, O.**—Coal from Briar Hill. V 63. 101
- 163b Burton, J. P., Massillon, O.**—Coal. V 63. 101
- 163c Andrews & Hitchcock, Youngs-town, O.**—Briar Hill block coal. V 61 to 63. 101
- 163d Huddell & Seitsinger, Philadel-phia, Pa.**—Anthracite coal from Draper's colliery. W 58. 101
- 164 Keys, John, Brockwayville, Pa.**—Lump of bituminous coal. Y 56. 101
- 164a Suydam, M. A. & Co., Columbus, O.**—Coal from Straitsville Mining Com-pany. V 63. 101
- 165 Eastern Kentucky Railway, River-ton, Ky.**—Sections of cannel and bitumi-nous coals. T 68. 101
- 165a Hayden, P., Columbus, O.**—Coal from Hocking county. V 63. 101
- 165b Steubenville Coal Company, Steu-benville, O.**—Bituminous coal. V 63. 101

## Coal, Stone.

- 165<sup>c</sup> Pomeroy Coal Company, Pomeroy, O.—Coal. V 63. 101
- 165<sup>d</sup> Brooks, W. B., & Son, Hocking county, O.—Coal. V 63. 101
- 165<sup>e</sup> Newark Coal Company, Newark, O.—Cannel coal. V 63. 101
- 166 Dyasart & Co., Philadelphia, Pa.—Bituminous white ash coal from Cambria county, Pa. Y 57. 101
- 166<sup>a</sup> Franklin Coal Company, Akron, O.—Coal from Summit county. V 63. 101
- 166<sup>b</sup> Fitch, E. A., Columbus, O.—Coal from Athens county. V 63. 101
- 166<sup>c</sup> Howells, Anthony, Massillon, O.—Coal from Pigeon Run. V 63. 101
- 167 Kimes, J. B., & Co., Philadelphia, Pa.—Slate mantels, house decorations, building material. T 50. 102
- 168 Williams Marble & Slate Mantel Co., Philadelphia, Pa.—Marble and marbleized slate mantels, etc. T 48. 102
- 169 Wilson & Miller, Philadelphia, Pa.—Marbleized slate mantels, etc.; plain slate work. T 51. 102
- 171 Hayes, Coulter, & Co., Philadelphia, Pa.—Slate mantels with grates. T 59. 102
- 172 Dougherty, E. D., Philadelphia, Pa.—Blocks of Dougherty marble of Tennessee, rough and polished; pedestals, slabs, etc. The Dougherty marble is used in the U. S. Capitol, Treasury, South Carolina State House, and over one hundred and fifty other buildings, public and private, in all parts of the country. Operated since 1853. Quarry in Doughertyville, Hawkins county, Tenn. T 49. 102
- 172<sup>a</sup> Peninsula Stone Co., Peninsula, O.—Building stone. V 63. 102
- 173 Columbian Marble Co., Rutland, Vt.—Marble wainscoting, pedestal, tiling, etc. T 54. 102
- 174 Van Gunden, Young, & Drumm, Philadelphia, Pa.—Vermont marble tablets and rustic monument; Italian marble. T 47. 102
- 175 Innis, G. S., Warden of Ohio Penitentiary, Columbus, O.—Limestone from State quarries at Columbus, O. V 61 to 64. 102
- 175<sup>a</sup> Field, F. K., Philadelphia, Pa.—North River, Pennsylvania, and Virginia blue stone. T 53. 102
- 176 Gurney, H. D., St. Paul, Minn.—Minnesota granite—red, white, and blue. T 50. 102
- 177 Forest City Stone Co., Cleveland, O.—Sawed stone flagging. T 54. 102
- 178 Chase, M. K., Bluehill, Maine.—Cut granite pedestal. (*Nave.*) 102
- 179 Martin, H. F., Allentown, Pa.—Slate mantels and blackboards, school slates, etc. T 51. 102
- 180 Chandler, C. H., Brownville, Maine.—Roofing slate. T 51. 102
- 181 Allen, James T., & Co., Philadelphia, Pa.—Scagliola and Marezzo marble for interior decoration. T 54. 102
- 182 Fauchere, A. L., & Co., New York, N. Y.—Marble mantels, etc. T 50. 102
- 183 Williams, Chas., St. Louis, Mo.—Tennessee, Italian, and Missouri marble work; jewel box. T 53. 102
- 183<sup>a</sup> Barker, H., & Bro., Philadelphia, Pa.—Pedestal of Massachusetts granite. (*Nave.*) 102
- 184 Denton, Drake W., Office, 17 North Front street, Philadelphia, Pa.—Excelsior fire and water-proof slate roofing, and flax waste-composition batting. All orders promptly attended to. T 56. 102
- 185 Tillson, Davis, Rockland, Maine.—Plain, polished, and ornamental granite work. T 51. 102
- 185<sup>a</sup> Finnigan, M., Cincinnati, O.—Buena Vista stone. V 61 to 63. 102
- 185<sup>b</sup> Fish, W., & Co., Columbus, O.—Stone from Portsmouth and Black Lick, Ohio. W 63. 102
- 185<sup>c</sup> Finch, Pruyn, & Co., Glens Falls, N. Y.—Block of marble. T 51. 102
- 186 Maine Slate Co., Skowhegan, Maine.—Roofing slate, dark, rich, lustrous, unfading color, unequaled elasticity, toughness, and strength, wonderful rift and smoothness of surface. T. H. Dinsmore, *Business Manager*. T 53. 102
- 187 Chapman Slate Co., Bethlehem, Pa.—Roofing slate, flagging, stairways, blackboards, posts, door and window sills, mantels. T 64. 102
- 188 Lehigh Slate Co., Slatington, Pa.—Roofing and school slate, mantels, blackboards, bath tubs; bureau, table, and washstand tops. T 64. 102
- 188<sup>a</sup> Hinsdale, Doyle, & Co., New York, Granite monuments. T 72. 102
- 188<sup>b</sup> Fisher & Bird, New York, N. Y.—Marble mantels. T 50. 102
- 188<sup>c</sup> Howell, C. M., Lancaster, Pa.—Marble monuments. V 60. 102
- 189 Allentown Slate Mantel Co., Allentown, Pa.—Slate mantels. T 51. 102
- 189<sup>a</sup> Hinton, David, Xenia, O.—Building limestone. V 61 to 64. 102
- 189<sup>b</sup> Caguires, Frank, Chicago, Ill.—Antique vase of limestone. T 53. 102
- 190 Carpenter & Raymond, Cambridge City, Ind.—Monumental work. T 71. 102
- 191 McDonald, Alexander, Cambridge, Mass.—The Centennial Cascade, a rustic rockwork surmounted by a cross (granite from Glen quarries, Mason, N. H., carved at Cambridge, Mass.), exhibiting fine quality of this granite and its capabilities for carved and polished work. N 56 and T 67. 102
- 191<sup>a</sup> Bosler, Marcus, Dayton, O.—Limestone. V 61 to 63. 102
- 191<sup>b</sup> Ballard & Galloway, Finley, O.—V 61 to 63. 102  
<sup>a</sup> Building limestone. 102  
<sup>b</sup> Lime, and water lime rock. 103
- 192 Bodwell Granite Co., Rockland, Maine.—Granite samples. T 72. 102
- 193 Brinton, Joseph H., Thornbury P. O., Pa.—Serpentine stone from quarries in Chester county, Pa. T 55. 102
- 194 Scorgie, Wight, & Co., Cambridge, Mass.—Polished granite fountain. U 48. 102

## Stone.

- 195 Struthers, W., & Sons, Philadelphia, Pa.—Mantels, font, group of birds in Caen stone; alto-relief in statuary, marble, sandstone, font, specimens of foreign marbles and native plaster; models for public buildings; specimens of native granites, marbles, and sandstones. T 25. 102
- 196 Pennsylvania Marble Co., Philadelphia, Pa.—Black marble mantel, book, and tiles. T 51. 102
- 197 Brown, E. F., Commandant Soldiers' Home, Dayton, O.—Stone from quarries on grounds of National Soldiers' Home. V 61 to 63. 102
- 197a Barker, Henry, & Sons, Quincy, Mass.—Quincy granite pedestal. (New.) 102
- 198 Rutland Marble Co., West Rutland, Vt.—Wrought and unwrought marble. T 59. 102
- 199 Maine Red Granite Co., Red Beach, Maine (G. G. McGlashan, superintendent).—Specimen block of red granite from top sheet of quarry. T 55. 102
- 199a Graves Brothers, Birmingham, O.—V 63. 102  
a Building stone. 102  
b Grindstones. 106
- 200 Columbia Slate Co., Slatington, Pa.—Manufactured Washington vein roofing slate. T 54. 102
- 201 Martin, F. O., St. George, Maine.—Block of dressed granite. T 64. 102
- 202 Wells, Chas. B., Marietta, O.—Sandstone for building purposes. T 64. 102
- 203 St. Johnsbury Granite Co., St. Johnsbury, Vt.—Granite monument and tablet.—T 56. 102
- 204 Merrill, Adams H., Williamsburgh, Maine.—Roofing slate. T 50. 102
- 207 Clemons, C. H., Sandusky, O.—Limestone. V 61 to 63. 102
- 208 Concord Granite Co., Quincy, Mass.—Granite pedestal. N 48. 102
- 209 Sheldons & Slason, West Rutland, Vt.—Pedestal of statuary and blue mottled marble. V 54. 102
- 210 Davis, I. J., Newark, O.—White and red sandstone. V 61 to 63. 102
- 211 McNally, William G., Cleveland, O.—Coat-of-arms of Ohio, carved from Berea stone. (Ohio State Building.) 102
- 211a Portland Brown Stone Quarries, Portland, Conn.—Stoops and doorways of Connecticut brown stone. (Outside.) 102
- 211b King, T. H., Trumansburg, N. Y.—Flag stones. (Outside.) 102
- 211c Stotler, D. C., Piqua, O.—Building limestone. V 61 to 64. 102
- 211d Strom & De Planque, New York, N. Y.—Marble table top and mantelpiece. T 51. 102
- 211e Fase, Lewis, Covington, O.—V 61 to 64. 102  
a Building limestone. 102  
b Lime. 103
- 211f North Pittsford Marble Company, Pittsford, Vt.—Marble monuments, pedestal, and design case. T 56. 102
- 211g Paul, John, & Co., Massillon, O.—Stone for building and glass manufacturing. V 61 to 63. 102
- 211h Myers, Uhl, & Co., Cleveland, O.—Marble mantel and grate. (Ohio State Building.) 102
- 212 Thompson, Wm. S., Springfield, Ohio.—V 63. 102  
a Stone. 102  
b Lime. 103
- 212a Traber, Jacob, Cincinnati, O.—Limestone. V 61 to 64. 102
- 212b Mueller, John M., Cincinnati, O.—Buena Vista stone. V 61 to 63. 102
- 212c Richey, Morris S., Waverly, O.—Building stone. V 61 to 64. 102
- 212d Singer & Talcott Stone Company, Chicago, Ill.—Illinois limestone dressed by machinery. (At spring S. E. of Horticultural Hall.) 102
- 212e St. Johnsbury Granite Company, St. Johnsbury, Vt.—Granite monument and tablet. T 57. 102
- 212f Richmond Marble Company, of Vermont, Philadelphia, Pa.—White marble pedestal. T 57. 102
- 213 Amherst Stone Co., Cleveland, O.—V 63. 102  
a Blocks of sandstone. 102  
b Grindstones. 106
- 214 Warthorst & Co., Massillon, O.—V 63 and T 61. 102  
a Blocks of sandstone. 102  
b Grindstones. 106
- 214a Berea Stone Company, Berea, O.—V 63. 102  
a Building stone and flagging. 102  
b Grindstones, and scythe stones. 106
- 215 Philadelphia & Reading Railroad Co., Philadelphia, Pa.—T 72 and Y 56. 102  
a Building stone. 102  
b Limestone. 103
- 216 Worthington & Sons, North Amherst, Ohio.—T 56 and V 63. 102  
a Amherst building stone. 102  
b Grindstones, etc., from quarries at Amherst and Lake Huron, Mich. 106
- 216a Burlington Manufacturing Co., Burlington, Vt.—Marble tiling.—T 56. 102
- 217 Williams, R. L., Middle Granville, N. Y.—T 51. 102  
a Vermont and New York roofing slate. 102  
b Car coupler. 576

## COLLECTIVE EXHIBIT OF BUILDING STONES USED IN THE OHIO STATE BUILDING.

- 218 Hoffman, A. O., Thompson, Wm., and others, Springfield, O. 102
- 219 Berea Stone Co., Berea, O. 102
- 220 Hurst, I. R., Cleveland, O. 102
- 221 Ford, O. D., Cleveland, O. 102
- 222 Halderman, L., & Son, Cleveland, O. 102
- 223 Wagner, John, Cleveland, O. 102
- 224 Amherst Stone Co., Cleveland, O. 102
- 225 Black River Stone Co., Cleveland, O. 102
- 226 Paul, John, & Co., Massillon, O. 102
- 227 Wilson & Hughes Stone Co., Cleveland, O. 102
- 228 Clough Stone Co., Amherst, O. 102
- 229 Worthington & Sons, Amherst, O. 102

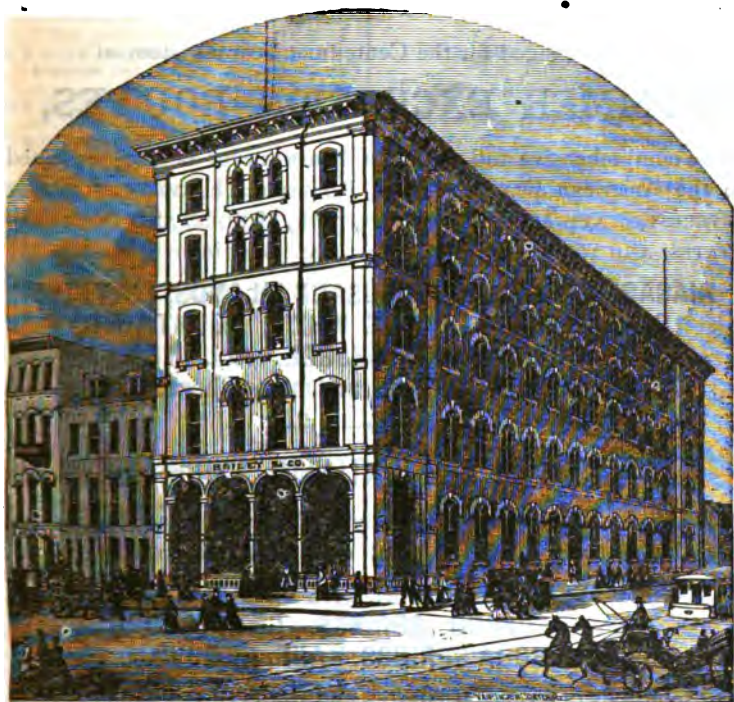
## Minerals, Stone.

- 230 Ohio Stone Co., Cleveland, O.  
 231 McDermott, J., & Co., Cleveland, O.  
 232 Coshocton Stone Co., Coshocton, O.  
 233 Stitt, Price, & Co., Columbus, O.  
 234 Finnegan, M., Cincinnati, O.  
 235 Finnegan, J. H., Cincinnati, O.  
 236 Montgomery, R. M., Youngstown, O.  
 237 Caldwell & Tod, Youngstown, O.  
 238 Byers & McIlhenny, Youngstown, O.  
 239 Mauser & Haid, Youngstown, O.  
 240 Hamilton, Homer, Youngstown, O.  
 241 Warthorst & Co., Massillon, O.  
 242 Stocking, Z. S., Mansfield, O.  
 243 Bosler, Marcus, Dayton, O.  
 244 Huffman, William, Dayton, O.  
 245 Tremain, Chas., Manlius, N. Y.—Cement and land plaster. V 72. 103  
 246 Ervin, D. S., Cedarville, Ohio.—Limestone. V 61 to 64. 103  
 246<sup>b</sup> Howes Cave Association, Howes Cave, N. Y.—Hydraulic cement and lime, ground plaster, and rock strata. Y 55. 103  
 247 Fireproof Building Co., New York, N. Y.—Teil concrete hollow blocks, hollow bricks, and beton blocks. T 55. 103  
 247<sup>a</sup> Michael, F. M., and others, Eaton, Ohio.—Limestone and lime. V 61 to 63. 103  
 247<sup>b</sup> Sints, George, Springfield, O.—Limestone and lime. V 61 to 64. 103  
 248 Mitchell, Wilson, Philadelphia, Pa.—Portland artificial stone building blocks, partitions, floors, colored paving tiles, etc. T 53. 103  
 248<sup>a</sup> Richardson, Geo., Milwaukee, Wis.—Artificial stone, with moulds and apparatus for hardening. X 57. 103  
 250 Wampum Cement & Lime Co., limited, New Castle, Pa.—Portland cement, and samples in artificial stone of various designs. T 57. 103  
 251 Coplay Cement Co., Allentown, Pa.—Cements, building blocks, pipe, ornaments, etc. T 56. 103  
 252 Allen Cement Co., Siegfried's Bridge, Pa.—Crude and manufactured cement. T 57. 103  
 253 Cedar Hollow Lime Co., Philadelphia, Pa.—Lime, lime rock, model of furnace, and model of receptacle for storing and preserving lime. T 58. 103  
 255 Abbott Pavement Co., Brooklyn, N. Y.—Pavement. The Abbott Pavement is a bituminous concrete that has been used for six years past on many miles of roadways in Brooklyn, and for four or five years in Washington. It costs less than the asphalt pavement of Paris; in this country only about one-half. It costs less than one-half for repairs, and it is not nearly so slippery, while in all the other qualities, of smoothness, quietness, cleanliness, comfort to those driving on it, economy of horse and vehicles, it is admirable. Under patents held by the Abbott Pavement Company, old stone, macadam, and wood pavements can be utilized as a foundation, and millions of dollars' worth of wood pavements, now going rapidly to decay, can be saved, as demonstrated on many miles that have been covered in the city of Brooklyn T 70. 103  
 256 Union Stone Co., Boston, Mass.—T 50.  
<sup>a</sup> Articles in artificial stone, soapstone register borders, millstone cement, etc. 103  
<sup>b</sup> Emery wheels. 106  
 256<sup>a</sup> Shields, King & Co., Newark Star Glass Works, Newark, Ohio.—Sands, etc., for making glass. V 61 to 63. 104  
 257 Hampton, Cutter, & Sons, Woodbridge, N. J.—Clays, kaolin, sand. T 55. 104  
 258 Such, George, South Amboy, N. J.—Samples of clay. T 58. 104  
 259 Sarchet, J. W. & J. T., Glen Loch Post Office, Pa.—T 57.  
<sup>a</sup> Moulding sand and kaolin. 104  
<sup>b</sup> Flint. 106  
 260 Kier Brothers, Pittsburg, Pa.—Fire clay. Y 56. 104  
 261 Bradford, H., Philadelphia, Pa.—Maryland quartz. T 54. 104  
 261<sup>a</sup> Tucker, George, New York, N. Y.—Tripoli and polishing rouge. N 68. 106  
 262 Schreiber, W. A. H., Phoenixville, Pa.—Clay, kaolin, flint, spar, and sand; potters' and decorators' materials. T 69. 104  
 263 Toll, Charles, Monroe, Mich.—Washed and crude silice. V 67. 104  
 264 Zihlmann, Joseph, Bellaire, O.—Wooden mould for shaping blown glass. T 64. 104  
 265 Dover Fire Brick Co., Canal Dover, Ohio.—Fire clay. T 63. 104  
 266 Kreisacher, B., & Son, Philadelphia, Pa.—Fire clay, etc. X 56. 104  
 267 American Kaolin Co.; Works, New Garden, Chester county, Pa.; office, 233 South Third street, Philadelphia, Pa.—Kaolin, china, fire clay, and fire sand. X 58. 104  
 268 Dixon Crucible Co., Jersey City, N. J.—Crude and refined graphite. P 72. 105  
 269 Strow, Wile, & Co., Philadelphia, Pa.—Black lead crucibles, retorts, covers, etc.: plumbago, crude and prepared: lumber pencils, stove polish. T 59. 105  
 270 Taylor, Robert, & Co., Philadelphia, Pa.—Black lead crucibles. T 58. 105  
 271 Morse Bros., Canton, Mass.—Stove polish, lumber pencils, plumbago. The "Rising Sun Stove Polish," noted for beauty of polish, saving of labor, durability, freedom from dust and odor, when heated. This preparation is an excellent article. The Rising Sun Lumber Pencils, and samples of plumbago, from which they are manufactured. T 56. 105  
 273 Jersey City Crucible Manufacturing Co., Jersey City, N. J.—Crucibles and stove polish. T 58. 105  
 274 Phoenix Manufacturing Co., Taunton, Mass.—Crucibles and stove polish. T 58. 105  
 275 Webb, Robert, Boston, Mass.—Stove polish; crude and prepared plumbago. T 60. 105



**ESTABLISHED 1830.**

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## Minerals, Mineral Water, Metallurgical Products.

**276** Nibbinger, Edward, Philadelphia, Pa.—Quartz paste for sharpening razors and knives. T 52. 106

**277** Hand, James C., & Co., Philadelphia, Pa.—Corundum manufactured by the Pennsylvania Corundum Co. T 57. 106

**278** Washington Mills Emery Manufacturing Co., Ashland, Mass.—Emery. T 57. 106

**279** Boyd & Chase, New York, N. Y.—Arkansas and Washita oilstone. N 68. 106

**284** U. S. Soapstone Manufacturing Co., Cincinnati, O.—Steatite. P 77. 106

**285** Patten, F. H., Bath, Maine.—Feldspar and quartz, for potteries and sand paper factories. T 70. 106

**286** Lehigh Whetstone Co., Allentown, Pa.—Whetstones from Lehigh mountain, near Allentown, Pa. T 57. 106

**288** Coffin, Redington, & Co., New York, N. Y.—Electro selean, a polishing powder for all fine metals, and infusorial silica from Nevada, from which the above is made.

## Analysis:

Silica,	83.5
Alumina,	2.7
Water,	13.5
Loss,	.3
	—100.

T 72. 106

**289** Louis, Julius, & Bro., Jeffersonville, Ind.—Hot Springs, Arkansas, and other oilstones. N 68. 106

**290** Sibley, Freeman K., Waltham, Mass.—The prize medal emery and crocus cloth. (Only medals ever awarded in the world.) T 53. 106

**291** Schultz, Carl H., New York, N. Y.—Carbonic acid and mineral spring waters, siphons, glass fountains, etc. T 58. 107

**291a** Jarves & Hooper, Detroit, Mich.—T 53. 107

a Fertilizers and animal charcoal. 107

b Glue and neat's-foot oil. 652

**292** Knight & Widden, Portland Plaster Mills, Portland, Maine.—Calcined and ground land plaster. T 59. 107

**293** Champion Spouting Spring, Saratoga Springs, N. Y.—Saratoga water. T 58. 107

**294** Marsh & Co., Sandusky, O.—Gypsum. V 61 to 63. 107

**295** Gettysburg Katalysine Co., Gettysburg, Pa.—Katalysine spring water. T 57. 107

**296** Navassa Phosphate Co., Baltimore, Md.—Crude and ground phosphates, from Navassa Island, West Indies; and other fertilizing materials. T 57. 107

**297** Charleston, S. C., Mining & Manufacturing Co., Philadelphia, Pa.—Goodrich phosphatic nodules, mined from Agassiz's Ashley fish basin, Lamb's landing, S. C. T 58. 107

**298** Bolen & Byrne, New York, N. Y.—Artificial mineral waters, granular effervescent salts, siphons, etc. T 60. 107

**299** Lippincott, Chas., & Co., Philadelphia, Pa.—Apparatus for dispensing aerated waters. B 38. (Name and Transcripts.) 107

**300** Lawrence, A. R., & Co., Excelsior Park, Saratoga Springs, N. Y.—Excelsior and Union Spring Saratoga waters, and apparatus for having them on draught in their natural condition. T 70. 107

**300a** Tufts, Jas. W., Boston, Mass.—Soda water fountains. (Name and Transcripts.) 107

## Metallurgical Products.

**301** Hastings & Co., Philadelphia, Pa.—Gold leaf, foil, and bronze; silver leaf, bronze powder, etc. P 47. 110

**302** Wallis, Jno. G., Fulton, Ark.—Base bullion. N 55. 110

**303** Cambria Iron & Steel Co., Johnstown, Pa.—Iron—pig, bloom, and muck bar, rail piles and rails; steel—Bessemer pig, and spiegeleisen, ingots, blooms, and rails. T 65. 111

**303a** Huntingdon & Broad Top Railroad Co., Philadelphia, Pa.—Pig iron. Y 56. 111

**304** Wood, W. D., & Co., McKeesport Iron Works, Pittsburg, Pa.—Patent planished sheet iron. T 61. 111

**305** Park Bro. & Co., Black Diamond Steel Works, Pittsburg, Pa.—Cast steel; samples of homogeneous crucible cast steel, boiler plate, and flangings. T 62. 111

**305a** Mahoning Valley Centennial Association, Youngstown, Ohio.—Pig and manufactured iron. V 63. 111

**306** Rowland, James, & Co., Kensington Iron and Steel Works, Philadelphia, Pa.—Anvil brand, refined bar, band, skelp, hoop, and nut iron; plow, cultivator, and shovel steel. T 64. 111

**307** Wood, Alan, & Co., 519 Arch street, Philadelphia, Pa.—Manufacturers of patent planished, galvanized, and common, and charcoal bloom, sheet, and plate iron. T 61. 111

**307a** Andover Iron Co., Phillipsburg, N. J.—Pig and spiegeleisen iron. T 64. 111

**308** Straus, J. E., & Co., Philadelphia, Pa.—Hoop iron. P 71. 111

**309** Miller, Metcalf, & Parkins, Crescent Steel Works, Pittsburg, Pa.—Crucible steel and articles manufactured therefrom. T 60. 112

**309a** Glasgow & Port Washington Iron and Steel Co., Port Washington, O.—Pig iron. W 63. 112

**310** Hussey, Wells, & Co., Pittsburg, Pa.—Crucible cast steel bars, sheets, homogeneous boiler plates, railway axles, forgings, edge tools, rake teeth. T 68. 112

**311** Phillips, Nimick, & Co., Sligo Iron Mills, Pittsburg, Pa.—Iron. The only manufacturers of "sligo" fire box, boiler plate, sheet and bar iron, and "Tyronne" plate, tank, sheet, and bar iron. Slates rolled one hundred inches wide. T 67. 112

**312** Union Iron Co. of Buffalo, Buffalo, N. Y.—Solid wrought iron rolled beams. T 64 and U 60. 112

**321a** State of Indiana (by E. T. Cox, State Geologist).—Fig, bar, and railroad iron; cut nails. V 57. 112

## Metallurgical Products.

- 313** Otis Iron & Steel Co., Cleveland, O.—Ingots, bars, plates, and forgings of Siemen's Martin steel. T 65. 111
- 314** Cleveland Rolling Mill Co., Cleveland, O.—Pig metals, rails, bars, etc., of iron and Bessemer or Siemen's Martin steel. T 60. 111
- 315** South & North Alabama Railroad, Montgomery, Ala.—Iron. Y 60 and T 57. 111
- 316** State of New Jersey (by Geo. H. Cook, State Geologist, New Brunswick, N. J.).—T 70.  
 a Iron, steel, spiegeleisen. 111  
 b Spelter, sheet zinc, zinc white. 113
- 317** Peru Steel & Iron Co., Clintonville, N. Y.—Loops, blooms, billets, bars, and steel. T 63. 111
- 317a** Silicon Steel Co., New York, N. Y.—Silicon steel, rails, etc.; steelified iron. T 63. 111
- 318** Washburn & Moen Manufacturing Co., Worcester, Mass.—Iron wire rods; iron and steel wire. T 63. 111
- 318a** Valentines & Co., Bellefonte Iron Works, New York, N. Y.—Cold blast charcoal iron. T 61. 111
- 318b** Youngstown Rolling Mill Co., Youngstown, Ohio.—Horse shoe, bar, hoop, and band iron, steel mixed with iron. V 61 to 64. 111
- 318c** Wick, Ridgway, & Co., Youngstown, Ohio.—Railroad iron, of all sizes. V 61 to 64. 111
- 318d** Brown, Bennett, & Co., Youngstown, Ohio.—Pig, bar, and sheet iron. V 61 to 64. 111
- 319** Eyhon & Lloyd, Philadelphia, Pa.—Roughing rolls, hand rounds, and squares. T 65. 111
- 319** American Sheet & Boiler-plate Co., Cleveland, Ohio.—Plate, sheet, corrugated, galvanized, metallic tile, universal plate and agricultural iron, Bessemer or Siemen's Martin steel. T 59. 111
- 320** Cooper, Hewitt, & Co., New York, N. Y.—Iron fluxes, blooms, pigs, rods, bars, rails, beams; chain, wire, horseshoe, and Martin steel. T 66. 111
- 321** Hanging Rock Iron Region Furnaces (Chas. Campbell, Commissioner), Ironton, Ohio.—Pig iron, with articles manufactured therefrom. T 69. 111
- 322** Beale, Horace A., Parkesburg, Pa.—Charcoal and puddled iron for boiler tubes and plates, muck bar of superior quality, and hollow bottom plates for puddling furnace. T 66. 111
- 323** Clark, Wm., & Co., Pittsburg, Pa.—Hoop, band, and scroll iron. T 66. 111
- 324** Reese, Graff, & Woods, Pittsburg, Pa.—Wrought iron of all descriptions; cast and special steel; tool steel, spring steel, plow steel, machinery and agricultural steel, fire steel, steel hoop, steel cotton ties, horse and mule shoes, steel toe calks, steel boiler-plate. T 66. 111
- 325** Andrews Brothers, Youngstown, O.—Bessemer, foundry, and mill pig iron. V 61 to 64. 111
- 326** McCullough Iron Co., Philadelphia, Pa.—Bloom and refined cleaned sheet iron; charcoal blooms. Manufacturers of "Galvanized," "Best Bloom," "Best Refined," "Harvey's cleaned Sheet Iron," cleaned iron for stamping purposes, leaded roofing plates, corrugated iron, black and galvanized. P 70. 111
- 327** Moorhead & Co., Soho Iron Mills, Pittsburg, Pa.—Galvanized and black sheet iron; roofing and ceiling irons. T 66. 111
- 328** Henderson, James, Hamburg, Pa.—Wrought iron made by the Henderson process. T 59. 111
- 329** Brown & Co., Wayne Iron & Steel Works, Pittsburg, Pa.—Cold-blast charcoal metal, blooms, boiler plate, bars; agricultural irons. T 62. 111
- 331** Edgar Thomson Steel Co. (limited), Pittsburg, Pa.—Bessemer steel rails, billets, blooms, and ingots. T 66. 111
- 333** Lucy Furnace Co., Pittsburg, Pa.—Pig metal, etc. T 66. 111
- 334** Carnegie Bros. & Co., Pittsburg, Pa.—Wrought iron beams, channels, bridge iron, etc. T 66. 111
- 335** Wilson, Walker, & Co., Pittsburg, Pa.—Railroad car forgings. T 66. 111
- 336** Keystone Bridge Co., Pittsburg, Pa.—Raritan Bay pivot bridge, weldless chord bars, wrought iron, tubular sectional columns. T 66. 111
- 337** United States Corrugated Elbow Co., Cincinnati, Ohio.—Stovepipe elbow machine; stovepipe elbows. T 61. 111
- 338** Gregory & Co., Jersey City, N. J.—American cast steel. T 59. 111
- 339** Duncan, John W., Philadelphia, Pa.—Pig metal. T 72. 111
- 340** Tuacarasaw Coal & Iron Co., Cleveland, Ohio.—Pig iron. T 71 and V 63. 111
- 341** Rhodes & Co., Cleveland, Ohio.—Bessemer car-wheel and malleable charcoal irons. T 71 and V 63. 111
- 342** Woodstock Iron Co., Anniston, Ala.—Hot-blast, cold-blast, and spiegeleisen iron, charcoal. T 63. 111
- 343** Middleton, C. W. & H. W., Philadelphia, Pa.—Collective exhibit of Fort Pitt Iron & Steel Works, Soho Iron Mills, Solar Hoop Iron Mills, Philadelphia Iron & Steel Co., Parkesburg Iron Works, Corydon Winch, Van Alen & Co., Cumberland Tube Works, Danville Iron Co. and Star Chain and Nail Works—iron and steel. T 65 to 66. 111
- 344** Crane Iron Co., Catsauqua, Pa.—Foundry and forge pig iron; cinder. T 64. 111
- 345** Alexander, John S., Philadelphia, Pa.—Bayonet spade. P 68. 111
- 346** Singer, Nimick, & Co., Pittsburg, Pa.—Saw, tool, plow, machinery, safe, and boiler steel; steel railway axles and springs. T 69. 111
- 346a** Selma & Alabama Railroad, Montgomery, Ala.—Iron. Y 60. 111
- 347** Magnetite Iron Co., Philadelphia, Pa.—Bessemer ore products. T 69. 111
- 348** Crab Orchard Iron Co., Philadelphia, Pa.—Samples of iron and steel. T 69. 111

## Metallurgical Products.

- 348<sup>a</sup> Chester Iron Co., Chester, N. J.—Iron ore. T 64. 111
- 349 Danville Iron Co., Danville, Pa.—Railroad iron. T 66. 111
- 350 Winch, Corydon, Philadelphia, Pa.—Wrought iron spikes. T 66. 111
- 351 Philadelphia Iron & Steel Co., Philadelphia, Pa.—Special shapes and manufactures of iron. T 66. 111
- 351<sup>a</sup> Ward, L. B., Niles, O.—Common boiled iron. V 61 to 63. 111
- 352 Cumberland Nail & Iron Co., Bridgeton, N. J.—Wrought iron pipe. T 66. 111
- 353 Davis, O. W., jr., Bangor, Me.—Charcoal pig iron, fluxes, cinders; articles made in part from Katahdin iron. T 69. 111
- 354 Durham Iron Co., Riegelsville, Pa.—Flux, pig iron, and cinders. T 64. 111
- 355 Glendon Iron Co., Easton, Pa.—Flux, slag, and pig iron. T 64. 111
- 356 Selma, Rome, & Dalton Railroad, by S. W. Baird, Cincinnati, O.—Charcoal pig iron, slag and charcoal, spiegel, car wheels. X 64. 111
- 359 Northampton Furnace, worked by the Bethlehem Iron Co., Bethlehem, Pa.—Pig iron, flux, slags. T 64. 111
- 360 Lehigh Iron Co., Allentown, Pa.—Flux, slag, and pig iron. T 64. 111
- 361 Bethlehem Iron Co., Bethlehem, Pa.—Charges and products of iron, Bessemer, and spiegeleisen furnaces; products from Bessemer steel mill. T 64. 111
- 362 Etna Iron Co., Allentown, Pa.—Flux, slag, and iron. T 64. 111
- 363 Coleraine Iron Co., Northampton county, Pa.—Pig iron. T 64. 111
- 364 Thomas Iron Co., Hokendauqua, Pa.—Iron and flux. T 64. 111
- 365 Allentown Rolling Mill Co., Allentown, Pa.—Flux, iron, and slag, fist-plate bolts, nuts, spikes, rivets, etc. T 64. 111
- 366 Allentown Iron Co., Allentown, Pa.—Pig iron. T 64. 111
- 367 Lehigh Valley Iron Co., Copley, Pa.—Pig iron, cinders. T 64. 111
- 368 Carbon Iron Co., Parryville, Pa.—Flux, slag, and pig iron. T 64. 111
- 369 Saucon Iron Co., Hellertown, Pa.—Pig iron. T 64. 111
- 370 Catasauqua Iron Co., Catasauqua, Pa.—Rolled iron and steel, iron and steel bars bent hot and cold and fractured. T 64. 111
- 371 Lehigh Zinc Co., Bethlehem, Pa.—Metallic and sheet zinc, zinc oxide. T 64. 111
- 372 Stewart & Co., South Easton, Pa.—Round, square, and triangular iron wire. T 64. 111
- 373 Gough, Edward, Allentown, Pa.—Turned rolls. T 65. 111
- 374 Bay State Iron Co., Boston, Mass.—Homogeneous iron boiler plates and iron. T 64. 111
- 375 Co-operative Iron & Steel Works, Danville, Pa.—T and street passenger railroad iron. T 63. 111
- 376 Shalter, R. M., Carrick Furnace, Franklin county, Pa.—Cold-blast pig iron. T 63. 111
- 377 Philadelphia & Reading Railroad Co., Philadelphia, Pa.—Rails. T 72. 111
- 378 Mintzer, S. J. W., Philadelphia, Pa.—Silicon steel. T 63. 111
- 379 Shelby Iron Co., Shelby Iron Works, Ala.—Charcoal pig iron, chilled castings, wire rods, cotton ties. T 71. 111
- 380 Chrome Steel Co., Brooklyn, N. Y.—Chrome steel, with samples showing torsional, tensile, and compressive strength; welded chrome steel and iron; ingredients of manufacture. T 64. 111
- 381 Cartwright, McCurdy, & Co., Youngstown, O.—Hoop, band, and horse-shoe iron and steel. V 63 and T 64. 111
- 382 Burton, J. P., Massillon, O.—Iron from Massillon Furnace. V 63. 111
- 383 Rockhill Iron & Coal Co., Philadelphia, Pa.—Pig iron. T 72. 111
- 384 Tecumseh Iron Co., Tecumseh, Ala.—Charcoal pig iron, limestone, charcoal. T 70. 111
- 385 Albany & Rensselaer Iron & Steel Co., Troy, N. Y.—Bessemer steel and iron rails, plates, merchant bars, axles, horseshoes, etc. T 68. 111
- 386 Nes, Charles M., York, Pa.—Silicon steel; steel and steel capped rails. T 63. 111
- 388 Grand Tower Mining, Manufacturing, & Transportation Co., Grand Tower, Ill.—Iron ore products; cokes. T 68. 111
- 389 Globe Rolling Mill Co., Cincinnati, O.—Specialties, Globe Norway iron and Globe refined iron. Iron, T 63. 111
- 390 Lackawanna Iron & Coal Co., Scranton, Pa.—Steel and iron railroad bars. T 63. 111
- 391 Passaic Rolling Mill Co., Paterson, N. J.—Rolled iron, rivets, nuts. T 64. 111
- 392 Cox, Justice, jr., & Co., Philadelphia, Pa.—Pig, bar, sheet, tank, pipe, and angle iron; spikes, railway car axles. T 70. 111
- 394 Rogers, J. & J., Iron Co., Ausable Forks, N. Y.—Round and square iron and charcoal billets for steel, from Palmer ore. T 62. 111
- 395 Vesuvius Furnace, Etna Iron Works, Ironton, Ohio.—Pig iron, cold blast charcoal car-wheel iron. T 68. 111
- 396 Etna Furnace, Etna Iron Co., Hanging Rock, O.—Pig iron, cold-blast charcoal car-wheel iron. T 68. 111
- 397 Alice Furnace, Etna Iron Works, Hanging Rock, O.—Pig iron, "Whitwell ovens," and Ferry process. T 68. 111
- 397<sup>a</sup> Briar Hill Iron & Coal Company, Youngstown, O.—Pig iron of various grades. V 61 to 64. 111
- 398 Blanche Furnace, Etna Iron Works, Ironton, Ohio.—Pig irons, Whitwell hot blast and Ferry process. T 68. 111
- 399 Hecla Iron & Mining Co. (John Campbell, President), Ironton, O.—Pig iron, cold blast charcoal car-wheel irons. T 68. 111
- 399<sup>a</sup> Struthers Iron Co., Youngstown, O.—Bessemer, foundry, and gray forge pig iron. V 61 to 63. 111

## Metallurgical Products.

- 400 Monitor Furnace Co., Ironton, O.—Pig iron, cold blast charcoal car-wheel iron. T 68. 111
- 401 Mount Vernon Furnace, Hiram Campbell & Sons, Ironton, O.—Pig iron, hot blast charcoal foundry iron. T 68. 111
- 401a Brooke, E. & G., Birdsboro', Pa.—Keystone pig iron. T 67. 111
- 402 Grant Furnace, W. D. Kelly & Sons, Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111
- 403 Center Furnace, W. D. Kelly & Sons, Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111
- 404 Howard Furnace Charcoal Iron Co., Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111
- 405 Buckhora Furnace, Charcoal Iron Co., Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111
- 406 Olive Furnace, Campbell, McGugin, & Co., Ironton, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 407 Lawrence Furnace Co., Ironton, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 408 Pine Grove Furnace, Means, Kyle, & Co., Hanging Rock, O.—Pig iron, hot blast charcoal irons. T 68. 111
- 409 Ohio Furnace, Means, Kyle, & Co., Hanging Rock, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 410 Ironton Furnace Iron and Steel Co., Ironton, O.—Pig iron, Player hot blast. T 68. 111
- 411 Belfont Iron Works, Ironton, O.—Pig iron, Player hot blast. T 68. 111
- 412 Washington Furnace, Union Iron Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 413 Scioto Furnace, L. C. Robinson & Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 414 Bloom Furnace, John Paul & Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 415 Clinton Furnace, W. I. Bell, Wheelersburg, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 416 Buckeye Furnace Co., Jackson, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 417 Cambria Furnace, D. Lewis & Co., Samsville, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 418 Jackson Furnace, L. P. N. Smith's heirs, Sciotoville, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 419 Jefferson Furnace Co., Oak Hill, O.—Pig iron; cold blast charcoal car-wheel and machinery iron. T 68. 111
- 420 Orange Iron Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 421 Star Furnace Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 422 Huron Iron Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 423 Tropic Furnace Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 424 Globe Iron Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 425 Fulton Furnace, Globe Iron Co., Jackson, O.—Pig iron, hot blast Jackson county stone coal iron. T 68. 111
- 426 Ophir Furnace Co., Jackson, O.—Hot blast pig iron. T 68. 111
- 427 Milton Furnace & Coal Co., Wellston, O.—Pig iron, Jackson county softener iron. T 68. 111
- 428 Wellston Coal & Iron Co., Wellston, O.—Pig iron, Jackson county stone coal iron. T 68. 111
- 429 Lincoln Furnace, I. M. McGhee's estate, Rud's Mills, O.—Pig iron, cold blast charcoal iron. T 68. 111
- 430 Eagle Furnace, L. C. Damarin & Co., Rud's Mills, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 431 Richland Furnace Co., Richland P. O., O.—Pig iron, hot blast charcoal iron. T 68. 111
- 432 Hope Furnace, L. C. Damarin & Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 433 Hamden Furnace, L. C. Damarin & Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 434 Vinton Furnace, Bancroft, Rader, & Co., Vinton Station, O.—Pig iron, hot blast bituminous coal and coke irons. T 68. 111
- 435 Keystone Furnace Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 436 Monroe Furnace, Union Iron Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 437 Latrobe Furnace, Bundy & Cobb, Berlin Cross-roads, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 438 Logan Furnace Co., Logan county, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 439 Union Furnace, Brooks & Hueaton, Haydensville, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 440 Pascal Iron Works, Philadelphia, Pa.—Cast iron work for Main Exhibition Building. 111
- 441 Lewis, Oliver, & Phillips, Pittsburg, Pa.—Iron in merchant bars and odd shapes. T 64. 111
- 442 Roberts, Henry, Newark, N. J.—Iron, Bessemer steel, and cast steel wire. N 69. 111
- 443 Andrews, Hitchcock, & Co., Cleveland, O.—Merchant bar and sheet iron V 61 to 64. 111
- 444 Mount Savage Furnace, Lexington & Carter county Mining & Manufacturing Co., Lexington, Ky.—Pig iron, hot blast charcoal iron. T 68. 111
- 444a Himrod Furnace Co., Youngstown, O.—Bessemer, foundry, and large pig iron. V 61 to 64. 111

## Metallurgical Products.

- 445 Buffalo Furnace, Culbertson, Earhart, & Co., Greensburg, Ky.—Pig iron, hot and cold blast charcoal iron. T 68. 111
- 446 Andrews & Hitchcock, Youngstown, O.—Scotch, foundry, forge, and mill iron. V 61 to 64. 111
- 446 Hunnewell Furnace, Eastern Kentucky Railway Co., Riverton, Ky.—Pig iron, hot blast charcoal foundry iron. T 68. 111
- 448 Liking Iron Co., Newark, O.—Pig iron. V 61 to 64. 111
- 447 Pennsylvania Furnace, Eastern Kentucky Railway Co., Riverton, Ky.—Pig iron, hot blast charcoal foundry iron. T 68. 111
- 448 Charlotte Furnace Co., Riverton, Ky.—Pig iron, hot blast charcoal foundry iron. T 68. 111
- 449 Laurel Furnace, Robert Scott & Co., Riverton, Ky.—Pig iron, cold blast charcoal car-wheel iron. T 68. 111
- 450 Gallia Furnace, Norton, Campbell, & Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111
- 451 Raccoon Mining and Manufacturing Co., Riverton, Ky.—Pig iron, hot and cold blast charcoal iron. T 68. 111
- 452 Ashland Furnace, Lexington & Big Sandy Railroad Co., Ashland, Ky.—Pig iron, bituminous coal, and Player hot blast. T 68. 111
- 453 Bellefonte Furnace, Means, Russell, & Means, Ashland, Ky.—Pig iron, hot blast charcoal foundry iron. T 68. 111
- 454 Norton Iron Works, Ashland, Ky.—Pig iron, nail plate, nails. T 68. 111
- 455 Buena Vista Furnace, Means & Co., Ashland, Ky.—Pig iron, hot blast charcoal iron. T 68. 111
- 456 Trigg Furnace, D. Hillman & Sons, Empire Iron Works, Ky.—Pig iron, cinders, etc.; hot blast charcoal iron. T 68. 111
- 457 Center Furnace, D. Hillman & Sons, Empire Iron Works, Ky.—Pig iron, hot blast charcoal iron. T 68. 111
- 458 Empire Iron Works, Trigg county, Ky.—Samples of boiler plate and refined charcoal iron. T 68. 111
- 459 Cleveland Malleable Iron Co., Cleveland, O.—Malleable iron castings and tackle blocks; fifth wheels. T 55. 111
- 460 Traber & Aubrey, Cincinnati, O.—Broken car-wheels, chill tests, and castings from Hanging Rock pig iron; pig iron. T 68. 111
- 461 Hanging Rock Iron Region, Iron-ton, O.—Pig iron. T 68. 111
- 462 Sellers, William, & Co., Edgemoor Iron Co., Wilmington, Del.—Wrought and cast iron work for Main Exhibition Building. 111
- 463 Roberts, A. & P., Pencoyd Rolling Mills, Philadelphia, Pa.—Wrought iron work for Main Exhibition Building. 111
- 464 Morris, Tasker, & Co., Philadelphia, Pa.—Cast iron work for Main Exhibition Building. 111
- 465 Watson Manufacturing Co., Paterson, N. J.—Iron framework of the Mair Exhibition Building. 111
- 466 Pusey, Jones, & Co., Wilmington, Del.—Iron work for Machinery Hall. 111
- 467 State of Michigan (Jay A. Hubbell, Houghton, Mich., Superintendent of Mineral Department).—V 67.
- a Pig, ingot, and manufactured iron and steel. 111
- b Ingot, bar, and rolled copper in its various stages. 112
- c Maps, models, stamp-mill model, etc. 120
- 468 Manhattan Brass Co., New York, N. Y.—Sheet brass; brass, copper, and zinc tubing; brass goods, nickel-plated oilers, etc. T 65. 112
- 469 Pope, Cole, & Co., Baltimore Copper Co., Baltimore, Md.—Specimens of copper mattes and slags, and refined copper; metallurgical products. T 64. 112
- 470 Revere Copper Co., Boston, Mass.—Copper and yellow metal sheets and bars; tinned metal for stove reservoirs; bronze cannon cast by a patented process. T 64. 112
- 471 Pennsylvania Lead Co., Pittsburg, Pa.—Refined pig lead from ores of Colorado and Utah. T 63. 113
- 472 Benedict & Burnham Manufacturing Co., Waterbury, Conn.—Sheet brass, German silver, brass tubing, rods, and wire, lamp burners, etc. T 61. 113
- 473 Passaic Zinc Co., Passaic, N. J.—Zinc ingots, foil, castings, and oxide; sheet zinc. T 63. 113
- 473a Crocker Bros. & Co., Taunton, Mass.—T 61.
- a Copper and yellow metal. 113
- b Zinc. 113
- 474 Holmes, Booth, & Haydens, Waterbury, Conn.—Brass and German silver wire, tubing, rivets, lamp trimmings, burners. T 61. 113
- 476 Matthiessen & Hegeler Zinc Co., La Salle, Ill.—Refined spelter; sheet tin to show the thickness of the common numbers. Various sizes of casks for shipment. Rolled zinc plates for galvanic batteries, lithographing, etc. T 70. 113
- 477 Wharton, Joseph, Camden, N. J.—Nickel goods. T 63. 114
- 478 Taylor, N. & G., Co., Philadelphia, Pa.—Tin plate patterns. T 62. 114
- 480 Scovill Manufacturing Co., Waterbury, Conn.—Sheet brass; German silver, gold and silver plated metal; lamps and trimmings; hinges, buttons, thimbles, castors, metal tubes, etc. P 67. 114
- 481 Ansonia Brass & Copper Co., Ansonia, Conn.—Brass and copper goods, sheet metal and wire, planished brass and copper. T 54. 114
- 482 Waterbury Brass Co., Waterbury, Conn., and 52 Beckman street, New York, N. Y.—Brass and German silver in sheets, rolls, wire, and tubes; brass kettles, copper and brass rivets and bolts; percussion caps, all qualities; powder flasks, shot belts and pouches; game bags, metallic eyelets, and tape measures. T 62. 114
- 483 Lancroft, C. E. & H. B., Fair Haven, Conn.—Sulphates of nickel, ammonia, cobalt, and aluminum. P 68. 114

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Mining Engineering.

## Mining Engineering.

- 484 Holley, Alexander L., New York, N. Y.—Exhibit relating to metallurgical engineering. (*West gallery*.) 120
- 485 State of New Jersey (by Geo. H. Cook, State Geologist, New Brunswick, N. J.).—Geological maps, mine maps, mine and vein models. T 70. 121
- 485a Lowe, S. B., Chattanooga, Tenn.—Map of Chattanooga iron district. X 63. 120
- 486 Prince, Franklin, & Bullock, E. L., Audenried, Pa.—Model of the Wharton anthracite coal vein at Beaver Brook collieries, Audenried, Pa. T 60. 121
- 487 Hanford, Theodore, Jersey City, N. J.—Specimen of the strata of the Gravelly Gold Mines of Ballarat, Victoria, Australia. T 64. 121
- 488 Charleston, S. C. Mining & Manufacturing Co., Philadelphia, Pa.—Model of their works. Y 60. 121

For location of objects, indicated by letter and figure, see *Key to Notation*, p. 35; ground plan, p. 26



# American Newspaper Union.

A. J. AIKENS, President.

New York Newspaper Union, 148 and 150 Worth St., New York.	}	315 Newspapers, \$3.00 per line, per week.			
Chicago Newspaper Union, 114 Monroe St., Chicago.		350	"	\$3.50	" "
Milwaukee Newspaper Union, 365 East Water St., Milwaukee.	}	120	"	\$1.25	" "
Albany Newspaper Union, 143 Race St., Cincinnati.		200	"	\$2.00	" "
Southern Newspaper Union, 227 Second St., Memphis, Tenn.	}	145	"	\$1.50	" "
St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.		73	"	\$ .75	" "

## THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed *co-operative* for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1866, the idea of co-operation, *with advertisements*, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. These are now over two thousand newspapers printed upon the co-operative plan in the United States and Canada, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

## The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least *one hundred copies every year to each square mile of the settled portions of the United States.*

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

New England . . . . .	78	Illinois . . . . .	117	Nebraska . . . . .	15
New York . . . . .	201	Michigan . . . . .	86	Missouri . . . . .	27
New Jersey . . . . .	27	Wisconsin . . . . .	98	Georgia . . . . .	20
Pennsylvania . . . . .	65	Tennessee . . . . .	29	Alabama . . . . .	32
Virginia . . . . .	24	Kentucky . . . . .	29	Louisiana . . . . .	11
No. and So. Carolina . . .	24	Minnesota . . . . .	79	Mississippi . . . . .	29
Ohio . . . . .	122	Iowa . . . . .	85	Other States . . . . .	46
Indiana . . . . .	81				

## AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the least aggregate weekly circulation being *seven hundred thousand seven hundred and thirty copies (700,730).*

SEND TO EITHER OFFICE FOR A CIRCULAR.

# HEALTH! BEAUTY!!

Strong, Pure, and Rich Blood, Increase of Flesh and Weight, Clear Skin, and Beautiful Complexion secured to all through

## DR. RADWAY'S SARSAPARILLIAN RESOLVENT

Every drop of the Sarsaparillian Resolvent communicates through the Blood, Sweat, Urine, and other fluids and juices of the system the vigor of life, for it repairs the wastes of the body with new and sound material. Scrofula, Consumption, Glandular Disease, Ulcers in the Throat, Mouth, Tumors, Nodes in the Glands and other parts of the system, Sore Eyes, Strumous Discharges from the Ears, and the worst forms of Skin Diseases, Eruptions, Fever Sores, Scald Head, Ring Worm, Salt Rheum, Erysipelas, Acne, Black Spots, Worms in the Flesh, Tumors, and all Weakening and Painful Discharges and Night Sweats are within the curative range of this wonder of Modern Chemistry, and a few days' use will prove to any person using it for either of these forms of disease, its potent power to cure them. If the patient, daily becoming reduced by the wastes and decomposition that are continually progressing, succeeds in arresting these wastes, and repairs the same with new material, made from healthy blood, and this the Sarsaparillian will and does secure, a cure is certain: for, when once this remedy commences its work of purification and succeeds in diminishing the loss of wastes, its repairs will be rapid, and every day the patient will feel himself growing better and stronger, the food digesting better, appetite improving, and flesh and weight increasing. Not only does the SARSAPARILLIAN RESOLVENT excel all known remedial agents in the cure of Chronic, Scrofulous, Constitutional, and Skip Diseases, but it is the only positive cure for Kidney, Bladder, and Urinary Diseases, Gravel, Diabetes, Dropsy, Stoppage of Water, Incontinence of Urine, Bright's Disease, Albuminaria, and in all cases where there are brickdust deposits, or the water is thick, cloudy, mixed with substance like the white of an egg, or threads like white silk, or there is a morbid, dark, bilious appearance, and white bonedust deposits, and when there is a pricking, burning sensation when passing water, and pain in the Small of the Back along the Loins.

**Tumor of 12 years' growth cured by Radway's Resolvent.**

BEVERLY, MASS., July 18th, 1869.

DR. RADWAY: I have had Ovarian Tumor in the ovaries and bowels. All the doctors said "there was no help for it." I tried everything that was recommended, but nothing helped me. I saw your Resolvent, and thought I would try it, but had no faith in it, because I had suffered for TWELVE YEARS. I took six bottles of the Resolvent, one box of Radway's Pills, and used two bottles of your READY RELIEF, and there is not a sign of a tumor to be seen or felt, and I feel BETTER, SMARTER, and happier than I have for twelve years. The worst tumor was in the left side of the bowels, over the groin. I write this to you for the benefit of others. You can publish if you choose.

HANNAH P. KNAPP.

R. R. R.

## RADWAY'S READY RELIEF

Cures the worst pains in from one to twenty minutes. Not one hour after reading this advertisement need any one suffer with pain. Radway's Ready Relief is a cure for every pain. It was the first and is *THE ONLY PAIN REMEDY* that instantly stops the most excruciating pains, allays Inflammations, and cures Congestions, whether of the Lungs, Stomach, Bowels, or other glands or organs, by one application, in from one to twenty minutes. No matter how violent or excruciating the pain the Rheumatic, Bedridden, Infirm, Crippled, Nervous, Neuralgic, or prostrated with disease may suffer,

## RADWAY'S READY RELIEF

Will afford instant ease. Inflammation of the Kidneys, Inflammation of the Bladder, Inflammation of the Bowels, Congestion of the Lungs, Sore Throat, Difficult Breathing, Palpitation of the Heart, Hysterics, Croup, Diphtheria, Catarrh, Influenza, Headache, Toothache, Neuralgia, Rheumatism, Cold Chills, Ague Chills. The application of the READY RELIEF to the part or parts where the pain or difficulty exists will afford ease and comfort. Twenty drops in a half tumbler of water will, in a few moments, cure Cramps, Spasms, Sour Stomach, Heartburn, Sick Headache, Diarrhoea, Dysentery, Colic, Wind in the Bowels, and all Internal Pains. Travelers should always carry a bottle of RADWAY'S RELIEF with them. A few drops in water will prevent sickness or pains from change of water. It is better than French Brandy or Bitters as a stimulant.

## FEVER AND AGUE

FEVER AND AGUE cured for FIFTY CENTS. There is not a remedial agent in this world that will cure Fever and Ague and all other Malarious, Bilious, Scarlet, Typhoid, Yellow, and other Fevers (aided by RADWAY'S PILLS) as quick as RADWAY'S READY RELIEF. Fifty cents per bottle.

## DR. RADWAY'S PILLS,

Perfectly tasteless, elegantly coated, for the cure of all Disorders of the Stomach, Liver, Bowels, Kidneys, Bladder, Nervous Diseases, Headache, Constipation, Costiveness, Indigestion, Dyspepsia, Biliousness, Bilious Fever, Inflammation of the Bowels, Piles, and all Derangements of the Internal Viscera. Warranted to effect a Positive Cure. RADWAY'S PILLS will free the system from all the above-named disorders. Price, 25 cents per box.

Read FALSE AND TRUE. Send one letter stamp to RADWAY & Co., No. 32 Warren Street, New York. Information worth thousands will be sent you.

## GREAT BRITAIN.

(North of Nave, Columns 25 to 38.)

## Minerals, Ores, Stone, Mining and Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 West Cumberland Iron & Steel Co. (limited), Workington, Cumberland.
  - a Iron ores. 100
  - b Coal and coke. 101
  - c Limestone. 103
- 1a Whitwell, Thomas, Stockton-on-Tees.—Cumberland ores. 100
- 2 Wigan Coal & Iron Co. (limited), Wigan, Lancashire, England.—Cannel and gas coal. 101
- 3 Penrose & Richards, Swansea, South Wales.—Coke fuel. 101
- 4 Dixon, Frederick, London.—Patent fuel. 101
- 5 Dudgeon, Arthur, Westminster, London.—Peat fuel, manufactured by the Irish Peat Fuel Co. 102
- 6 Lindley, Robert Charles, Mansfield, Nottinghamshire.—Stones from the Mansfield quarries. 102
- 7 Cwmorthin Slate Co. (limited), Portmadoc, North Wales.—Roofing slates. 102
- 8 Hunter, James, Aberdeen, Scotland.—Red polished granite monument. 102
- 9 Macdonald, Field, & Co., Aberdeen Granite Works, Aberdeen, Scotland.—Polished red granite monument. 102
- 10 Pen-yr-orsedd Slate Quarry Co. (limited), Carnarvon, North Wales.—Roofing slates, slate slabs, cisterns, ridges for roofs, billiard slabs, slate partly manufactured. 102
- 11 Shearer, Smith, & Co., Dalbeattie Granite Quarries, Scotland.—Scotch polished granite, and street paving blocks. 102
- 12 Beasbrook Granite Works, Beasbrook, Ireland.—Blue and gray Irish granites in headstones, monuments, and building work. 102
- 13 Great North of Scotland Granite Co. (limited), Peterhead, Scotland.—Monumental pedestal and vase in polished red granite. 102
- 13a Campbell, Hugh, & Son, Newry.—Polished granite. 102
- 14 Hollick & Co., Greenwich, London.—Portland cement. 103
- 15 Patent Selenitic Cement Co. (limited), London.—Method of preparing lime for mortar, for plastering and brickwork, and also for concrete. 103

- 16 Wouldham Cement Co., Wouldham-on-the-Medway, Kent, England.—Portland cement and its ingredients in different stages of manufacture. Concrete blocks and other objects made therefrom. 103
- 17 Lavers, Alfred Hamilton, London.—Portland cement, test blocks, cements, plaster of Paris, whiting. 103
- 17a Busse, G., & Co., London.—Cement. 103
- 18 Francis & Co., Cliffe Creek, Rochester.—Cements, cement concrete, parian scagliola, and decorated parian. 103
- 19 Grays Chalk Quarries Co. (limited) Grays, Essex.
  - a Chalk, whiting, kindred chalk, gilders' whiting. 103
  - b Flint. 103
- 20 Eastwood & Co. (limited), London.—Portland cement. 103
- 21 Pike, William Joseph, Wareham, Dorsetshire.—Clays. 104
- 22 Harrison, George King, Lye & Bretell Lane Fire Clay Mines & Brick Works, Stourbridge, England.—Stourbridge fire clays. 104
- 23 Dunn, Robert, & Co., St. Austell, Cornwall.—China clay, in its raw material; samples for potting, bleaching, paper manufacturing, etc. 104
- 24 Oakey, John, & Sons, Wellington Mills, London.—Crude emery stone; grain emery; flour emery. 106
- 24a Star Plate & Universal Polishing Powder Co., London.—Plate and polishing powder. 106

## Metallurgical Products.

- 25 Johnson, Matthey, & Co., London.—Articles in platinum; rare and precious metals. 110
- 26 Wigan Coal & Iron Co. (limited), Wigan, Lancashire.—Hematite, foundry, and forge pig iron. 111
- 27 Great Western Iron Co., Soudley Newnham.—Pig iron 111
- 28 West Cumberland Iron & Steel Co. (limited), Workington, Cumberland.—Pig iron, spiegeleisen, granulated blast furnace slag, Bessemer steel in the ingot; steel forgings, rails and rail sections, boiler and bridge plates, railway chairs, etc.; samples illustrating the testing of steel, and its metallurgy. 111

For classes of exhibit, indicated by numbers at end of entries, see Classification, pp. 27-45

## Metallurgical Products.

- 29 Smith, Frederick, & Co., Caledonia Works, Halifax, Yorkshire.—Rope, rigging, telegraph, card, reed, and bonnet wire; iron in its various stages of manufacture into wire. 111
- 30 Houghton, William Dickson, Warrington.—Wire for special and general purposes. 111
- 30a Tayler, D. F., & Co., New Hall Works, Birmingham.—Iron, steel, brass, and copper wire. 111
- 31 Edge & Sons, Coalport Works, Shropshire.—Wire ropes and chains for mining and engineering purposes. 111
- 31a Hawksworth, Ellison, & Co., Carlisle Works, Sheffield.—Steel, and articles made therefrom. 111
- 32 Ash & Lacy, Globe Works, Staffordshire.—Galvanized, tinned, plain, and corrugated iron sheets; perforated zinc, metals, etc. 111
- 32a Ward & Payne, Sheffield.—Steel. 111
- 32b Whitwell, Thomas, Stockton-on-Tees.—Pig iron. 111
- 33 Cammell, Charles, & Co. (limited), Cyclops Steel & Iron Works, Sheffield.—Rolled iron armor plates. 111
- 34 Siemens, Charles William, London.—Specimens of iron and steel. 111
- 34a Jessop, William, & Sons (limited), Sheffield.—Steel in bars, sheets, and large and small plates. 111
- 34b Hatton, Sons, & Co., Bilston, Staffordshire.  
a Charcoal sheet iron. 111  
b Charcoal tin plates. 111
- 35 Baldwin, E. P. & W., Wilden Works, near Stourport.  
a Button and sheet iron black plates. 111  
b Tin and terne plates; tinned sheets. 111
- 35a Warrington Wire Rope Works, Liverpool.—Wire ropes, cord, etc. 111
- 36 Brown, John, & Co. (limited), Atlas Steel & Iron Works, Sheffield.—Armor plates; naval engineering. (*See Machinery Hall.*) 111
- 37 Swansea Tin Plate Co., The Tin & Terne Plate Manufacturers, Swansea Tin Plate Works, Swansea.—Tin and terne plates. 111
- 38 Nash, Henry, & Co., Liverpool.—Tin and terne plates, black plate, and patent continuous roofing terne plate. 111
- 39 Governor & Company of Copper Miners in England, London.—Tin and terne plates. 111
- 40 Morewood, E., & Co., Llanelly.  
a Tin and terne plates. 111  
b Machines for manufacturing tin and terne plate, and galvanized sheet iron. 111
- 41 Phosphor Bronze Co. (limited), London.—Phosphor bronze tools, locks, keys, tubes, wire, sheet, steam fittings, parts of machinery. 111

(*N. B. English Exhibits in this department are also installed in Agricultural Hall, and catalogued in that volume.*)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## NEW ZEALAND.

(North of *Nave*, Columns 10 to 17.)

## Stone, Mining Products, Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Parapara Iron & Coal Co., Nelson.  
  - a Brown hematite ore. 100
  - b Coal from the Aorere river. 101
  - c Limestones used as a flux for hematite ore. 103
- 2 Johnstone Bros., Nelson.—Hematite iron ore. 100
- 3 Nelson Committee, Nelson.  
  - a Iron, plumbago, galena, zinc blende, copper, antimony, and argentiferous lead ores. 100
  - b Coal from Coalbrookdale, Mount Roesfont, and Reefston. 101
  - c Marble from Ruatanuka, Golden Bay. 102
  - d Porcelain clays from Pakawau and Ruatanuka; steatite from Golden Gully, Collingwood. 104
- 4 Louissou, T. B., Nelson.—Iron ore, calcined iron ore. 100
- 5 Washbourne, W. E., Nelson.—Argentiferous lead ore. 100
- 6 Taranaki Committee.  
  - a Titanic iron sand, older tertiary marl, trachyte pebble, trachyte with crystals of hornblende, trachyte cast, hornblende, obsidian, nephrite, taranakite, carnolite. 100
  - b Lignite from Urenui. 101
  - c Pouters' clay from Urenui. 104
- 7 Colonial Museum, Wellington.—James Hector, Director.  
  - a Collection of minerals, containing magnetic iron, hematite, chrome, copper, lead, zinc, and manganese ores. 100
  - b Specimens illustrating the classification of New Zealand coals; petroleum from Sugar Loaf Point, Waipatu, Waipawa. 102
  - c Marble from Collingwood, Nelson. 102
  - d Steatite from Parapara Valley, Nelson. 104

- 8 Kennedy Brothers, Nelson.  
  - a Coal from the Brunner Mine, and coke manufactured from it. 101
  - b Raw and ground fire clay. 104
- 9 Albion Coal Co., Nelson.—Coal from Ngakauau. 101
- 10 Reid, Alexander W., Canterbury.—Coal from Kowai Pass. 101
- 11 Oakden, J. J., Canterbury.—Anthracite coal from Lake Coleridge. 101
- 12 Rowley, Wilson, & Co., Otago.—Coal from Shag Point, Palmerston. 101
- 13 Ross, A., Poverty Bay, Auckland.—Petroleum. 101
- 14 Wilson, W., Christchurch.—Hewn white and yellow limestone. 102

## Metallurgical Products.

- 15 New Zealand Commissioners.—Specimens of alluvial gold and gold-bearing quartz from Auckland, Westland, and Otago, collected by the Bank of New Zealand. 110
- 16 Government of New Zealand.—Specimens of alluvial gold from Nelson and Westland, and of auriferous quartz from the west coast; specimens of alluvial gold from Otago; bars of melted and refined gold; bars of chloride of silver, and silver; model representing gold exported from New Zealand 1862-75. 110
- 17 Nelson Committee.—Specimens of auriferous quartz from Reefston. 110
- 18 Reefston Committee.—Specimens of auriferous quartz from the Inangahua and Lyell districts, Nelson. 110
- 19 Tolhurst, George E., Bank of New Zealand, Wellington.—Models of gold ingots. 110

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# NEW SOUTH WALES.

(North of Nave, Columns 13 to 15.)

## Minerals, Metallurgical Products, Mining Engineering.

### Minerals, Ores, Stone, Mining Products.

- 1 McCallum, Argyle, Yaas.—Copper and lead ores from Woolgarloo Mine; iron ore from Bogolong. 100
- 2 Stuart, Seymour C.—Auriferous quartz from Adelong; lode and stream tin ore. 100
- 3 King, P. G., Goonoo.—Sulphuret of antimony, from Nundle. 100
- 4 Howard, John, Sofala.—Antimony, from Crudine creek. 100
- 4a Dewhurst, Arthur, Tamworth.—Collection of minerals. 100
- 5 Coulter, Edward, Sydney.—Magnetic iron ore containing gold and copper, from Mount Lambie. 100
- 5a Cleghorn, Wm., Uralia.—Collection of minerals. 100
- 6 Department of Mines, Sydney.
  - a Mineralogical and geological collection; specimens of gold from the Southern, Western, and Northern districts; models of gold nuggets found in New South Wales; gold trophy, showing production of New South Wales. 100
  - b Coal trophy. 100
- 7 Towns & Co., Sydney.—Kerosene shale from Murrumbidgee. 100
- 8 Fountain, John, Gosford, Brisbane Water.—Iron ore from Brisbane Water. 100
- 9 King, P. G., Goonoo Goonoo.—Lepidodendron fossils from Goonoo Goonoo. 100
- 10 Wilson, W., Monaltrie, Richmond river.—Fossils. 100
- 11 Butchart, J. Hawkins, Sydney.—Lode and stream tin ore. 100

- 12 Caddell, Alfred, Sydney.—Tin ore and wash dirt from Vegetable Creek Tin Mines. 100
- 13 New South Wales Shale & Oil Company, Sydney.—Kerosene shale. 100
- 14 Towns, R., & Co., Sydney.—Kerosene shale from Murrumbidgee. 100
- 15 Browne, Thomas, Bishop's Bridge.—Sandstone from West Maitland. 100
- 16 Douglass, W., Sydney.—Slate from a quarry near Goulburn. 100
- 17 Young, John, Sydney.—Granite from Moruya; marble. 100
- 18 Mackintosh & Oakes, Bathurst.—Kaolin. 100
- 19 Warden, David, Ulladulla.—Kaolin. 100

### Metallurgical Products.

- 19a Lithgow Valley Iron & Coal Co.—Iron. 111
- 20 New South Wales Commissioners.—Copper ingots. 112
- 21 Moore & Co., Sydney.—Tin in ingots. 113
- 22 Vegetable Creek Company, Sydney.—Tin ingots. 113
- 23 New South Wales Commissioners.—Tin ingots, bars, and grain tin. 113

### Mining Engineering.

- 24 Caddell, Alfred, Sydney.—Model of shaft of Vegetable Creek Tin Mine, and report, plan, and photographs. 121
- 25 Government Printing Office, Sydney, New South Wales.—Mines and mineral statistics. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## VICTORIA.

(North of Nave, Columns 11 to 13.)

## Minerals, Ores, Stone, Mining Products.

**Minerals, Ores, Stone, Mining Products.**

- 1 Collection of Rocks, Minerals, and Fossils, illustrative of the geology, mineralogy, and mining resources of Victoria, exhibited for, and on behalf of the Government, by R. Brough Smyth, F.G.S., F.L.S., Assoc. Inst. C.E., Secretary for Mines, and Chief Inspector of Mines for the colony. 100
  - a Older igneous or plutonic rocks.
  - b Newer igneous or volcanic rocks.
  - c Aqueous rocks.
  - d Upper silurian.
  - e Upper palaeozoic.
  - f Mesozoic-carbonaceous.
  - g Tertiary.
  - h Collection of mineral specimens.
  - i Economic collection: auriferous quartz.
  - k Fac-similes of gold nuggets found in Victoria.
  - l Economic minerals.
  - m Fossil fruit.
- 2 Acadia Catherine Gold Mining Company, Sandhurst.—Golden stone. 100
- 3 Bleasdale, J. I., Melbourne.—Collection of gems and precious stones, consisting of diamonds, blue sapphires, oriental emeralds, rubies, aqua-marines, topazes, spinels, beryls, opals, garnets, tourmalines, etc. 100
- 4 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—
  - a Fac-similes of nuggets found in Victoria, and mineralogical and geological specimens. 100
  - b Coal. 101
  - c Sawn slate, block of granite, polished marble. 102
  - d Limestones from Major Plains. 103
  - e Black clay, clay and sand; kaolin clay. 104
  - f Sharpening stones from Wangunyah. 106
- 5 Costerfield Gold & Antimony Mining Co., Melbourne.—Antimony ore. 100

- 6 Hanckar, J. H. H., Melbourne.—Nickel ore from the Boa Kaine Mine, New Caledonia. 100
- 7 McGie, James, & Co., Melbourne.—Nickel ore. 100
- 8 Shenandoah Gold Mining Co., Sandhurst.—Gold-bearing quartz. 100
- 9 Mining Department of Victoria, Melbourne.—Coal. 101
- 10 Mansfield Shire Council, Mansfield.—Polished marble, hewn sandstone. 102
- 11 Arthur & Dogherty, New Zealand.—Lithographic stone. 106
- 12 Lewis & Whitty, Fitzroy.—Knife polish. 106
- 13 Hattersley, J., Yackandandah.—Aerated waters. 107
- 14 Lyon, George, Spring Creek, Beechworth.—Lemonade, soda water, and ginger ale. 107
- 15 Rowlands & Lewis, Ballarat.—Tonic potass, soda, lithia, and seltzer waters, and ginger ale. 107

**Metallurgical Products.**

- 16 Bright Bros. & Co., Melbourne.—Star antimony in ingots. 113
- 17 Costerfield Gold & Antimony Mining Co., Melbourne.—Antimony. 113
- 18 Hodgson, Richard, Collingwood.—Star antimony, pig lead, block tin. 113
- 19 Croaker, Scott, & Co., Melbourne.—Star antimony. 113

**Mining Engineering.**

- 20 Smyth, R. Brough, Department of Mines, Melbourne.—Geological maps, reports, etc. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# BAHAMAS.

*(South of Nave, Columns 15 to 17.)*

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## Minerals, Ores, Stone, Mining Products.

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### Minerals, Ores, Stone, Mining Products

1 Dupuch, Joseph.—Building stone.

208

2 George, Jno. S.—Building stone.

208

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# BERMUDAS.

*(North of Nave, Columns 15 to 17.)*

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## Minerals, Ores, Stone, Mining Products.

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### Minerals, Ores, Stone, Mining Products.

1 Bermuda, Government of.—Top of a pillar of stalagmite, and a small stalactite from a submerged cave.

100

2 Ness, Ph.—Building stones.

102

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



# QUEENSLAND.

(North of North Avenue, Columns 10 to 15.)

## Mineral and Metallurgical Products, Mining Engineering.

### Minerals, Ores, Stone, Mining Products.

- 1 Aplin, D.—Trophy of tin ores. 100
- 2 Brisbane Tin Mining Co.—Tin ores, wash dirt, etc. 100
- 3 Cloncurry Mine, Proprietors of.—Manganese. 100
- 4 Daintree, Richard.—Collection of rocks, soils, and fossils illustrative of the colony. 100
- 5 Foote, Alfred.—Iron ores from West Morton. 100
- 6 Gregory, A. C.—Antimony ores. 100
- 7 Henry, Captain.—Nugget of native copper. 100
- 8 Hume, W. C.—Collection of tin ores. 100
- 9 Mount Marley Tin Mining Co.—Collection of tin ores. 100
- 10 Perry, Matthew.—Copper pyrites. 100
- 11 Stalger, C.—Antimony ores. 100
- 12 Tyrrell, J. de F.—Tin ores. 100
- 13 Wilkinson Mine, Proprietors of.—Cinnabar. 100
- 14 Government of Queensland.
  - a Copper ores, fossils, etc., from Ipswich; quartz and gold bearing stone from Gympie, Rockhampton, Ravenswood, Cawarrol, Palmer, Cloncurry, etc. 100
  - b Coal from Ipswich. 101
  - c Building stone. 102
  - d Plumbago. 105
- 5 Aberdare Mine, Proprietors of.—Coal. 101
- 16 Alexander, W. R.—Coal. 101
- 17 Allora Mine, Proprietors of.—Coal. 101
- 18 Bingera Mine, Proprietors of.—Coal. 101

- 19 Blackfellows' Creek Mine, Proprietors of.—Coal. 101
- 20 Bland & Wright, Perseverance Mine.—Coal. 101
- 21 Flagstone Creek, Proprietors of.—Coal. 101
- 22 Gulland & Co., Ipswich.—Coal and coke. 101
- 23 Rosewood Mine, Proprietors of.—Coal. 101
- 24 Tivoli Mine, Proprietors of.—Coal and coke. 101
- 25 Peak Downs Copper Mining Co.—Slab of polished malachite. 102

### Metallurgical Products.

- 26 Government of Queensland.
  - a Gold, in nuggets, from Gympie, Rockhampton, Ravenswood, Cawarrol, Palmer, Cloncurry, etc. 110
  - b Tin in ingots. 113
- 27 Government of Queensland.—Refined copper. 112
- 28 Mount Perry Copper Mining Co.—Ingots of copper. 112
- 29 Peak Downs Copper Mining Co.—Trophy of copper ingots. 112
- 30 Bulimba Tin Smelting Co.—Refined tin, in ingots.
- 31 Mount Marley Tin Co.—Refined tin, in ingots. 113
- 32 Queensland Smelting & Assaying Co.—Trophy of tin ingots. 113

### Mining Engineering.

- 33 Clifton Mine, Proprietors of.—Fossils, kaolin, etc., showing strata of mine. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# TASMANIA.

(South of North Avenue, Columns 13 to 15.)

## Minerals, Ores, Stone, Mining and Metallurgical Products.

### Minerals, Ores, Stone, Mining Products

- 1 British & Tasmanian Charcoal Iron Co.—Iron ores. 100
- 2 Hammond, W., Hobart Town.—Bismuth, from Mount Ramsey. 100
- 3 Harrap, A., Launceston.—Petrified wood. 100
- 4 Hull, Henry J., Hobart Town.—Tin ore, from George's Bay. 100
- 5 Innes, J. H., Hobart Town.—Tin ore, from Rongarooma. 100
- 6 Just, T. C., Launceston.—Iron ores and asbestos. 100
- 6a Royal Society of Tasmania.—Topazes and beryls from Bass's Straits Island. 100
- 7 Smart, Dr., Hobart Town.—Gold, in quartz. 100
- 8 Smith, James, Launceston.—Bismuth, from Mount Ramsey. 100
- 9 Stanhope Company.—Tin ore. 100
- 10 Harcourt, James, Hobart Town.
  - a Iron ores. 100
  - b Coal from Seymour. 101

- 11 Hematite Iron Works, West Tamar.
  - a Iron ores. 100
  - b Blue and white marble limestone. 100
- 12 Lyell & Gowan, Melbourne.
  - a Tin ore from Mount Bischoff. 100
  - b Coal from river Don. 101
  - c Slate from Piper's rivet. 100
  - d Marble limestone from river Don. 103
- 13 Groen, F., Harefield.—Coal. 101
- 14 Hurst, J., Hobart Town.—Coal from Tasman's Peninsular. 101
- 15 Kermode, W. A., Mona Vale.—Gray and brown freestone. 102
- 16 Reynor, E., Bridgewater.—Limestone, with fossils. 102
- 17 Coverdale, John, Port Arthur.—Pipe clay. 104

### Metallurgical Products.

- 18 Harcourt, James, Hobart Town.—Pig iron and castings. 111
- 19 Hematite Iron Works, West Tamar.—Pig iron and castings. 111
- 20 Mount Bischoff Tin Mining Co., Mount Bischoff.—Tin, in ingots. 113

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## INDIA.

(North of Nave, Columns 22 to 25.)

## Minerals, Ores, Stone, Mining and Metallurgical Products.

Collections selected from the India Museum by J. FORENS WATSON, M.A., M.D., LL.D., DIRECTOR OF THE INDIA MUSEUM, ETC.

## Minerals, Ores, Stone, Mining Products.

a Iron ores and magnetic iron sand from the Madras Presidency; iron ores from the Bombay Presidency; iron ores and magnetic iron sand from the Bengal Presidency; chrome iron ores from Salem and South Arcot; manganese ores from the Madras Presidency; copper ores from Nellore, Singbhum, and Deoghur; copper pyrites from the hills of Beloochistan; malachite from Central India; lead ore from Deoghur; galena from the Malanna and Parbutti mines, and from Caloor, Karnul, Chota Nagpur, Duttiah, Hazaribagh, and Beloochistan; (stibnite antimony ore) from Shigri, Busoh, Borneo, and Sarawak; tin stone from Junk Ceylon, Malacca, Kuhn, Mergui, Tenasserim, Larut, and Johore; gold sand from Purulia, Toradanally, Dandput, Rangoon, and Ramagberry; arsenical ores from Pegu, Burmah, Tenasserim, Bengal, and Madras; sulphur from Rangoon and Shorana. 100

b Coal from Nerbudda Coal and Iron Co., Gurrarwarra, Oormoo, Chigo, and Malacca; lignite from Darjiling; petroleum and naphtha from Burmah. 101

c Limestone from South Arcot, Nellore, Tripattur, Masulipatam, and Beronda; calcite from Ranigunj; calc spar from

Kabul; selenite from Ava; white mica from Salem; black mica from Behar; agalmatolite from Chota Nagpur; zeolites from Deccan; lime from Bownee, Salem, Bellary, and Soonporah. 103

d Clays, for pottery, from South Arcot, Madura, North Arcot, Sadigeri, Bangalore, and Vizianagram; powdered mica from Lahore; quartz, yellow and red ochre, fire and china clays from Madras; ball clay from Mangalore and Raepore; raw, fine white, and prepared clay, powdered marble, red lead and red ochre from Pattan; litharge from Calcutta; white lead from Punjab; white earth from Beronda; geroo from Raepore; pink and yellow earth from Paldeo; white earth from Punnah; yellow earth from Alipore; pipe clay from Singapore; red clay from Duttiah; white earth from Kotee; fullers' earth from Sind. 104

e Graphite from Caviatten Coodul, Trevandrum, Almorah, and Ceylon. 105

f Corundum from Madras, Salem, and Mysore; agates and carnelians from Cambay; gem sand from Ceylon; ruby sand from Travancore; rough garnets from Mysore and Vizianagram; calderite from Nepal; tourmaline from Nellore; epidote granite from Madras. 107

g Fibrous gypsum from Karnul; reh from Buttiana. 107

## Metallurgical Products.

A Crude iron from Assam; Wootz steel; native iron; native iron with slag. 111

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

## CANADA.

(North of Nave, Columns 16 to 23.)

## Minerals, Ores, Stone, Mining and Metallurgical Products.

Minerals, Ores, Stone, Mining Products.	
1 Gatling Gold Mining Co., Marmora, Ont.—Gold-bearing arsenical pyrites.	100
2 Russell, W. W., Ottawa, Ont.—Gold in quartz.	100
3 Lindsay, J. A., Toronto, Ont.—Gold, silver, and magnetic ores.	100
4 Jackfish Lake Gold Mining Co., Toronto, Ont.—Gold and silver, in quartz.	100
5 McKellar Bros., Prince Arthur's Landing, Ont.—Gold, in quartz.	100
6 McKellar, D., Prince Arthur's Landing, Ont.—Gold, in quartz.	100
7 Toronto Gold Mining Co., Toronto, Ont.—Gold-bearing arsenical pyrites.	100
8 Lockwood, W. P., St. Francois, Q.—Model of gold nugget.	100
9 Geological Survey, Canada, Q.	
a Quartz, magnetic sand, and alluvial gold, of gold nuggets, platinum, copper pyrites, native copper, magnetite, magnetic iron sand, hematite, iron ores, iron pyrites, native iron, antimony ore, galena, blende, barytes, mica, magnesite, kermesite, celestine, albite, orthoclase, asbestos, amethyst, agates, and Canadian rocks.	100
b Coal from Saskatchewan river, bituminous shale, crude and inspissated petroleum.	101
c Sandstones, marbles, marble column, dolomite, limestone, syenite, granite, gneiss, labradorite, jasper conglomerate, ornamental and polished slate, cut and polished stones.	102
d Hydraulic cement, gypsum.	103
e Clay, fire clay, clay for moulding, river and moulding sand, soapstone.	104
f Graphite.	105
g Lithographic stones, grindstones, whetstones, burr stones, granite for millstones.	106
h Brine, mineral water, phosphate of lime, shell marl.	107
10 Oppenheimer Bros., Victoria, Br. Col.—Gold nugget.	100
11 Robertson, Robt., Halifax, N. S.—Representation of the gold fields of Nova Scotia.	100
11a Morton, George, Frontenac Lead Mine.—Pig lead.	100
12 Donaldson, T. B., Oldham, N. S.—Gold in quartz.	100
13 Sibley, A. H., Silver Islet, Ont.—Silver ores and native silver.	100
13a Moody & Nelson, Victoria, B. R.—Native copper.	100
14 McKellar Bros., Fort William, Ont.—Silver ores, native silver, copper pyrites, and barytes.	100
15 Marks, T., & McKellar Bros., Fort William, Ont.—Silver ores.	100
16 Dawson, S. J., Ottawa, Ont.—Silver ores.	100
16a Simpson, John, Upham, N. B.—Manganese.	100
17 Cyrette, Ambrose, Fort William, Ont.—Silver ores.	100
18 Van Norman, Judge, Prince Arthur's Landing, Ont.—Native silver and silver ores.	100
19 Plumber, McIntyre, & Russ, Fort William, Ont.—Silver ores.	100
19a Jones, T. R., & Co., St. John, N. B.—Copper ore.	100
20 Eames, Prof., Pie Island, Ont.—Silver veinstone.	100
21 Stephen, George, Montreal, Q.—Silver ores.	100
22 Eureka Mining Co., Victoria, Br. Col.—Silver ores.	100
23 Mechanics' Institute, North Westminster, Br. Col.	
a Platinum.	100
b Anthracite.	101
24 West Canada Mining Co., Wellington, Ont.—Copper pyrites, copper ore.	100
25 Hime, H. L., Toronto, Ont.—Copper pyrites.	100
26 Plumber, B., Bruce Mine, Ont.—Copper pyrites.	100
27 Oliver, Geo., Perth, Ont.—Copper pyrites, bog iron ore.	100
28 Ontario Advisory Board, Toronto, Ont.	
a Copper pyrites, magnetic hematite, galena.	100
b Serpentine, syenite.	102
c Graphite.	105
d Emery.	106
e Phosphate of lime, shell marl.	107
29 Shaw, P., Harvey Hill, Q.—Copper pyrites.	100
30 Stewart, W. W., Montreal Q.—Native copper.	100
31 Douglas, Dr., Quebec, Q.—Copper ore.	100
32 Davidson, Wm., Alma, N. B.—Copper glance.	100
33 Russell, Grand Manan, N. B.—Copper glance.	100
34 Cole, Rufus, Dorchester, N. B.—Copper glance.	100
35 Sweet, R. J., Halifax, N. S.—Copper glance.	100
36 Lloyd, H. C., Madoc, Ont.—Magnetite, hematite.	100

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Mining and Metallurgy.

- 37 Ledyard, T. D., Toronto, Ont.—Magnetite. 100
- 38 Haycock, Will., Templeton, Q.—Magnetite. 100
- 39 Cobourg & Petersboro' Iron Co., Belmont, Ont.—Magnetite. 100
- 40 Bishop, A., Bell's Corners, Ont.—Magnetite. 100
- 41 Foley, James, Bathurst, Ont.—Magnetite with apatite. 100
- 42 Baldwin, A. H., Hull, Q.—Magnetite. 100
- 43 Chipman, David, Berwick, N. S.—Magnetite. 100
- 44 Lewis, Queen Charlotte's Island, Br. Col.—Magnetite. 100
- 45 Cowan, A., Brockville, Ont.  
a Hematite, burnt iron pyrites. 100  
b Phosphate and superphosphate of lime. 107
- 46 Crawford, J. D., & Co., Montreal, Q.—Hematite, spathic iron ore. 100
- 47 Gauthier, O., St. Urbain, Q.—Titanic iron ore. 100
- 48 Matheson & Gilice, Sydney, N. S.—Hematite. 100
- 49 Ottawa Iron & Steel Co., Ottawa, Ont.—Iron ore. 100
- 50 Stobie, James, Sault St. Marie, Ont.—Iron ore. 100
- 51 Duval, H. H., Quebec, Q.—Titanic iron ore. 100
- 52 McDougall, John, Three Rivers, Q.—Bog iron ore. 100
- 53 Steel Co. of Canada, Londonderry, N. S.—Iron ores. 100
- 54 MacKinnon, J. C., Whycomagh, N. S.—Iron ores. 100
- 55 Duhamel, Dr., Quebec, Q.—Iron pyrites. 100
- 56 Russell, Willis, Lotbiniere, Q.—Antimony ore. 100
- 57 Hibbard, F., Prince William, N. B.—Antimony ore. 100
- 58 Hime, L. H., Toronto, Ont.—Galena and copper pyrites, with silver and gold. 100
- 59 Sibley, Col., & McIntyre, J., Silver Idet, Ont.—Galena. 100
- 60 Johnson, C. J., Wallaceburg, Ont.—Galena, blende. 100
- 61 Devine, Thos., Toronto, Ont.—Galena. 100
- 62 Wearne, Capt., Toronto, Ont.—Galena, blende. 100
- 63 Markham, A., Hammond, N. B.—Pyrolusite. 100
- 64 Brown, J., N. S.—Pyrolusite. 100
- 65 Galway Lead Mining Co., Galway, Ont.—Barytes, calcspar. 100
- 66 Dolphin Manufacturing Co., Five Islands, N. S.—Barytes. 100
- 67 Starr, John, Halifax, N. S.—Barytes. 100
- 68 Baker Mine, North Burgess, Ont.—Mica in plates. 100
- 69 Ackery, James, Five Islands, N. S.—Dogtooth spar. 100
- 70 Dopp, Geo., Berlin, Ont.—Amethyst, fluorspar, and pyrites. 100
- 71 Mc Vicar, Geo., Toronto, Ont.—Amethyst. 100
- 72 Blackwood, R., Toronto, Ont.—Amethyst, fluorspar, and pyrites. 100
- 73 Morrison, W. A., Toronto, Ont.—Collection of Canadian precious stones. 100
- 74 Poole, H. S., Halifax, N. S.—Ores and associated rocks. 100
- 75 Honeyman, Dr., Halifax, N. S.—Collection of Nova Scotia rocks. 100
- 76 Bailey, G., Grand Lake, N. B.—Coal. 101
- 77 Hall, William, Springhill, N. S.—Coal. 101
- 78 Mitchell, Henry L., Glace Bay Mines, N. S.—Coal. 101
- 79 McQueen, Wm., Blockhouse Mines, N. S.—Coal. 101
- 80 Brown, R. H., Sydney Mines, N. S.—Coal. 101
- 81 McDonald, R. A., International Mines, N. S.—Coal. 101
- 82 McKeen, David, Caledonia Mines, N. S.—Coal. 101
- 83 Archibald, T. D., Gowrie Mines, N. S.—Coal. 101
- 84 Sutherland, James, Big Glace Bay, N. S.—Coal. 101
- 85 Fraser, J. W., Victoria Mines, N. S.—Coal. 101
- 86 Routledge, William, Gardiner Mines, N. S.—Coal. 101
- 87 Campbell, C. J., North Campbellton, N. S.—Coal. 101
- 88 Hoyt, Jesse, Acadia Mines, N. S.—Coal. 101
- 89 Hudson, James, Albion Mines, N. S.—Coal. 101
- 90 Simpson, Robert, Intercolonial Mines, N. S.—Coal. 101
- 91 Greener, John, Vale Colliery, N. S.—Coal. 101
- 92 Bennett, Wm., Scotia Mines, N. S.—Coal. 101
- 93 Sterling, E., Cape Breton, Big Glace Bay, Sydney, and L. Mines, N. S.—Coal. 101
- 94 Union Mining Co., Union Mines, Comox, Br. Col.—Coal. 101
- 95 Baynes Sound Mining Co., Baynes Sound Mines, Br. Col.—Coal. 101
- 96 Vancouver Mining Co., Vancouver Mines, Br. Col.—Coal. 101
- 97 Wellington Mining Co., Wellington Mines, Br. Col.—Coal. 101
- 98 Ketchum, E. K., Albert Mines, N. B.—Albertite and bituminous shale. 101
- 99 Byers, J., Albert Mines, N. B.—Albertite. 101
- 100 Smith, Wm., Toronto, Ont.—Peat. 101
- 101 Griffin, R. A., Huntingdon, Q.—Peat. 101
- 102 Belliveau Albertite & Oil Co., Westmoreland, N. B.—Albertite mineral oil. 101
- 103 Waterman Bros., London, Ont.—Petroleum and products. 101
- 104 Gibson, Robert L., Grimsby, Ont.—Building sandstones. 102

## Mineral Water, Metallurgical Products.

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|--|-----|---|-----|
| 110 Farquhar & Booth, Esqueving, Ont.—Building sandstones and flagging.                    | 102 | 141 Barclay & Morrison, Stony Mount<br>Manitoba.                                      |     |
| 111 Skead, Gloucester, Ont.—Building sandstones.   | 102 | a Dolomite.   | 108 |
| 112 Londley, Beckwith, Ont.—Building sandstones.   | 102 | b Clay.   | 104 |
| 113 Rankin, John, Pembroke, Ont.—Building sandstones.                                      | 102 | 142 Hayslip, John, Goderich, Ont.—Limestone.  | 102 |
| 114 Bishop, Henry, Nepean, Ont.—Building sandstones.                                       | 108 | 143 Young, Y. & G., Gloucester, Ont.—Limestone.                                       | 102 |
| 115 Decew, William, Onondaga, Ont.—Building sandstones.                                    | 102 | 144 Levallee, N., Carleton Place, Ont.—Limestone.                                     | 102 |
| 116 McGregor, Lachute, Q.—Building sandstones and limestones.                              | 102 | 145 Kirkpatrick Quarry, Parraboro', Q.—Limestone.                                     | 102 |
| 117 Goodfellow, Joseph, North Bay, N. B.   |     | 146 Forsyth, Robert, Montreal, Q.—Red granite monument.                               | 108 |
| a Building sandstones.   | 102 | 147 Bay of Fundy Red Granite Co., St. George, N. B.—Red polished granite.             | 108 |
| b Grindstones.   | 106 | 148 Danville School Slate Co., Danville, Q.—Ornamental slate panel, slates in blocks. | 108 |
| 118 Dor, U. Free Stone Co., Budreau, Vt., N. B.—Building sandstones.                       | 102 | 149 Danville Slate Co., Danville, Q.—School slates.                                   | 108 |
| 119 Caledonia Free Stone Co., Rockland, N. B.—Building sandstones.                         | 102 | 150 Rockland Slate Quarry, Melbourne, Q.—Slates.                                      | 108 |
| 120 Roberts & Co., Mary's Point, N. B.—Building sandstones.                                | 102 | 151 DeCew, William, Cayuga, Ont.  |     |
| 121 Bayview Quarry Co., Albert City, N. B.—Building sandstones.                            | 102 | a Lime and limestone.   | 103 |
| 122 Hopewell Quarry Co., Shepody Mt., N. B.—Building sandstones.                           | 102 | b Sandstone for glass-making and furnace lining.                                      | 104 |
| 123 McQuarrie, John, George River, N. S.—Building sandstones.                              | 102 | 152 Whitson & Slater, St. Marys, Ont.—Lime and limestone.                             | 103 |
| 124 Gilpin, Edwin, Springfield, N. S.  |     | 153 Dunbar, George, Rockwood, Ont.—Lime and limestone.                                | 103 |
| a Building sandstones.   | 102 | 154 Lewis, Levi, Kincardine, Ont.—Lime and limestone.                                 | 103 |
| b Limestone.   | 103 | 155 Buxton, George, Goderich, Ont.—Lime and limestone.                                | 103 |
| c Fire brick and fire clay.  | 104 | 156 Emsley, R., Guelph, Ont.—Lime and limestone.                                      | 103 |
| 125 Heustis, R. B., Wallace, N. S.—Building sandstones.                                    | 102 | 157 Ballantyne, Mrs., Galt, Ont.—Lime and limestone.                                  | 103 |
| 126 McDonald, George J., Cornwallis, N. S.—Building sandstones.                            | 102 | 158 Farquhar, E. & C., Dundas, Ont.—Lime and limestone.                               | 103 |
| 127 Peters, Henry S., Halifax, N. S.—Building sandstones.                                  | 102 | 159 Goudie, Thomas, Limehouse, Ont.—Lime and limestone.                               | 103 |
| 128 Vancouver Coal Co., Vancouver Island, Br. Col.—Building sandstones, marble, limestone. | 102 | 160 Lavallee, N., Carleton Place, Ont.—Lime and limestone.                            | 103 |
| 129 Howley, James, Montreal, Q.  |     | 161 Baker, W., Arnprior, Ont.—Lime and limestone.                                     | 103 |
| a Building and flagging sandstones.  | 102 | 162 Quebec Advisory Board, Quebec, Q.   |     |
| b Sandstone for glass-making.  | 104 | a Lime and limestone.   | 103 |
| 130 Pitton & Co., Quebec, Q.—Sandstone, flagging, curbstones.                              | 102 | b Porcelain clay.   | 104 |
| 131 Worthington & Co., Montreal, Q.  |     | c Phosphate of lime, chalk.   | 107 |
| a Polished marble.   | 102 | 163 Garvies, C. A., Montreal, Q.—Lime and limestone.                                  | 103 |
| b Limestone.   | 103 | 164 Robitaille, Dr., Quebec, Q.   |     |
| 132 Somerville, P. T., Arnprior, Ont.—Marble monument.                                     | 102 | a Limestone.  | 103 |
| 133 Halon, Alphonse, Quebec, Q.—Marble.  | 102 | b Marl.   | 107 |
| 134 Benjamin, H., & Co., Montreal, Q.  |     | 165 Quesnel, Sheriff, Arthabaska, Q.—Lime and hydraulic cement.                       | 103 |
| a Marble.  | 102 | 166 Douglas, David, Pugwash, N. S.—Lime.  | 103 |
| b Lime.  | 103 | 167 Goudie, Thomas, Limehouse, Ont.—Hydraulic cement.                                 | 103 |
| 135 Brunet, Joseph, Montreal, Q.—Marble monument.  | 102 | 168 McKay, Wm., Ottawa, Ont.—Hydraulic cement and artificial stone.                   | 103 |
| 136 Langevin, A. B., Quebec, Q.—Marble.  | 102 | 169 Buchanan Mineral Co., Hamilton, Ont.—Cement and mastics.                          | 103 |
| 137 Silver, John, Halifax, N. S.—Marble.   | 102 | 170 Gauvreau, P., & Co., Quebec, Q.—Cements and plasters, artificial stone.           | 103 |
| 138 McQuarrie, John, George River, N. S.—Marble and syenite.                               | 102 | 171 Hill, Albert J., Sydney, N. S.—Selenite.  | 103 |
| 139 Ingram, Wm., St. George, N. B.—Red granite clock case.                                 | 102 |   |     |
| 140 Baxter, B., Cayuga, Ont.   |     |   |     |
| a Dolomite.  | 102 |   |     |
| b Lime and limestone, hydraulic cement.  | 103 |   |     |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Minerals, Stone.

- 172 Gregory, V. R., & Co., Toronto, Ont.—Artificial stone monument. 103
- 173 Wandly, Henry, Clover Hill, Toronto, Ont.—Artificial stone. 103
- 174 Milner & Herd, Strathroy, Ont.—Artificial stone window cap. 103
- 175 Joslyn, J. H. L., Box 153, Tilsonburg, Ont.—Marbleade roofing, a seamless sheet of artificial stone, not excessively heavy, but wonderfully efficient; not resting on the roof boards, but accommodated to them by an intervening plastic waterproof composition. 103
- 176 Riggins, George, Kincardine, Ont.—Clay for bricks. 104
- 177 Russell, Samuel, London, Ont.—Clay for bricks. 104
- 178 Munn & Cochner, Dundas, Ont.—Clay for bricks. 104
- 179 Leslie, Robert, Glenwilliam, Ont.—Clay for bricks. 104
- 180 Townshend, Mrs. Mary, Rockville, Ont.—Clay for bricks. 104
- 181 Anderson, Thos., Nepean, Ont.—Clay for bricks. 104
- 182 Cashmore, Thos., Pembroke, Ont.—Clay for bricks. 104
- 183 McGregor, Daniel, Pembroke, Ont.—Clay for bricks. 104
- 184 Baker, William, Arnprior, Ont.—Clay for bricks. 104
- 185 Foshick, Eneas, Ramsay, Ont.—Clay for bricks. 104
- 186 Moore, Gilbert, Ramsay, Ont.—Clay. 104
- 187 Coulter, James, Ramsay, Ont.—Clay. 104
- 188 Metcalfe, James, Ramsay, Ont.—Clay. 104
- 189 Foster, W. A., Belleville, Ont.—Clay. 104
- 190 Workman, Hugh, Brantford, Ont.—Clay. 104
- 191 Peel, Thos. W., Montreal, Q.—Clay. 104
- 192 Mochan, Albert, St. Johns, Q.—Clay. 104
- 193 Jackson, Charles, Woodstock, N. B.—Clay. 104
- 194 Wells, William, Beamsville, Ont.—Pottery clay. 104
- 195 Ahren, J. H., Paris, Ont.—Pottery clay. 104
- 196 Pratt, Charles, London, Ont.—Pottery clay. 104
- 197 Farrar, G. H. & L. E., St. Johns, Q.—Pottery clay. 104
- 198 Bell, David, St. Johns, Q.—Clay drain tile. 104
- 199 Coppeland & McLaren, Montreal, Q.—Fire clay, sandstone facing for furnaces. 104
- 200 McMann, G. N., Grand Lake, N. B.—Fire clay. 104
- 201 Bannerman, Robert, Montreal, Q.—Pipe clay. 104
- 202 St. Johns Stone Chinaware Co., St. Johns, Q.—Fire brick. 104
- 203 Bishop, H., Nepean, Ont.—Sandstone for glass-making. 104
- 204 McDougall, John, & Sons, Three Rivers, Q.—Sandstone for furnace lining. 104
- 205 Oil Cloth Factory, Yorkville, Ont.—Sand. 104
- 206 Jackson, Charles, Woodstock, N. B.—Brick sand. 104
- 207 Sweet, S. H., Wentworth, N. S. a Kaolin. 104  
b Gypsum. 107
- 208 McDonald, George J., Cornwallis, N. S.—Refractory stone. 104
- 209 Law, John, London, Ont.—Black lead crucible. 105
- 210 Dominion of Canada Plumbago Co., office, Ottawa, Ont.; mines and works, Buckingham, Province of Quebec.—Manufacturers of electrotyping, lubricating, pencil, crucible, stove polish, and other stock of every grade. Assays and tests prove quality. Prices are ordinary current market rates. 105
- 211 Millet, John G., Grenville, Q.—Graphite. 105
- 212 Montreal Plumbago Mining Co., Montreal, Q.—Stove polish. 105
- 213 Martin, Charles, Montreal, Q.—Stove polish. 105
- 214 Kelly, John, Belleville, Ont.—Lithographic stones. 106
- 215 Ontario Lithographic Stone Co., Marmora, Ont.—Lithographic stone. 106
- 216 Read, Stevenson, & Co., Dorchester, N. B.—Grindstone polishing and cutters' stone. 106
- 217 Seaman & Co., Lower Cove, N. S.—Grindstones. 106
- 218 Douglass, David, Port Philip, N. S.—Grindstones. 106
- 219 Leroux, G., Quebec, Q.—Millstones. 106
- 220 Casgrain, Stoneham, Q.—Tripoli. 106
- 221 Fisher, W., Victoria, Br. Col.—Tripoli. 106
- 222 Coleman, William, Paris, Ont.—Raw and prepared gypsum. 107
- 223 Ontario Plaster Co., Mt. Healy, Ont.—Raw and prepared gypsum. 107
- 224 Converse, John A., Montreal, Q.—Raw and prepared gypsum. 107
- 225 Brown, A., Petitcodiac, N. B.—Gypsum and selenite. 107
- 226 Tobique Gypsum Co., Tobique, N. B.—Gypsum. 107
- 227 Albert Manufacturing Co., Hillsboro, N. B.—Calcined and anhydrous gypsum; alabaster. 107
- 228 McDonald, R. N., International Museum, N. S.—Gypsum. 107
- 229 Nova Scotia Advisory Board, Halifax, N. S.—Gypsum. 107
- 230 Davidson, H. A., Black River, N. S.—Gypsum. 107
- 231 Cove, Jas. A., Claremont Hill, N. S.—Gypsum. 107
- 232 Fulton, C. A., Wallace, N. S.—Gypsum. 107

## Minerals, Metallurgical Products.

- 232a Meighen Bros., Perth, Ont.—  
Phosphate of lime. 107
- 233 McLennan, Jos., Montague, N. S.  
—Gypsum. 107
- 234 Merchants' Salt Co., Seaforth, Ont.  
—Brine. 107
- 235 International Works, Goderich,  
Ont.—Brine. 107
- 236 Ransford, H., Clinton, Ont.—  
Brine. 107
- 237 Tecumseh Works, Goderich, Ont.  
—Brine. 107
- 238 Gray, Young, & Spalding, Seaforth,  
Ont.—Brine. 107
- 239 Jourvie, J. A., & Co., Caledonia  
Springs, Ont.—Saline, gas, and sulphur  
waters. 107
- 240 Winning, Hill, & Ware, Montreal,  
Q.—Carratraca water. 107
- 241 Gee, J. N., St. Francis Spring, Q.—  
Mineral water. 107
- 242 Hickman, James S., Amherst, N.  
S.—Saline water. 107
- 243 Murray, Edmund W., Bucking-  
ham, Q.—Phosphate of lime. 107
- 244 Buckingham Mining Co., Bucking-  
ham, Q.—Crystal phosphate of lime. 107

## Metallurgical Products.

- 245 Silver Islet Co., Silver Islet, Ont.—  
Ingot of silver. 110
- 246 Ottawa Iron & Steel Manufactur-  
ing Co., Ottawa, Ont.—Iron billets. 112
- 247 Field & Aydon Patent Smelting  
Co., Marmora, Ont.—Pig iron, smelted  
with pure petroleum. 112
- 248 Gauthier, O., St. Urbain, Q.—Ti-  
tanic pig iron. 112
- 249 McDougall, John, & Sons, Three  
Rivers, Q.—Charcoal iron; iron bars, bent  
and twisted cold; axes, tomahawk,  
slag. 112
- 250 Canadian Titanic Co., Bale St.  
Paul, Q.—Slags, titanic iron. 112
- 251 Chinié Eugene, Quebec, Q.—Viger  
steel. 112
- 252 Moisé Iron Works, Montreal, Q.—  
Iron, iron bloom. 112
- 253 McDougall, John, Montreal, Q.—  
Iron bloom, car-wheels. 112
- 254 Steel Co. of Canada, Londonderry,  
N. S.—Iron and steel. 112
- 255 West Canada Mining Co., Bruce  
Mines, Ont.—Ingot copper. 112
- 256 Lake George Antimony Co., Prince  
William, N. B.—Babbit metals, regulus,  
slags, oxidized ore. 112

## FRANCE.

*The French Exhibits in Mining and Metallurgy are installed in the Agricultural Building, and Catalogued in Part IV.)*

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



## GERMANY.

(South of Nave, Columns 28 to 38.)

## Minerals, Ores, Mining and Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Krupp, Fr., Essen.—Ores and raw products. 100
- 2 Burbach Works, Burbach.
  - a Iron. 100
  - b Coal. 101
  - c Stone. 102
- 3 Heinrichshütte, Au-on-the-Sieg.—Spathic iron ore. 100
- 4 Mine Owners of the Siegerland.—Ores, etc. 100

(The above exhibits are installed in Machinery Hall.)

## COLLECTIVE EXHIBIT OF PRODUCTIONS OF LEAD MINES AND FURNACES, ACCOMPANIED BY DRAWINGS.

- 5 Royal Prussian Smelting Works of the Upper Harz, Clausthal.—Lead, copper, and zinc ores. 100
- 6 Royal Prussian & Ducal Brunswick Smelting Works of the Lower Harz, Gaslar.—Argentiferous copper and lead ores. 100
- 6a Royal Prussian Smelting Works, Friedrichshütte.—Ores and litharge. 100
- 7 Joint Stock Association for Mining, & Lead & Zinc Manufactures, Stolberg, near Aix-la-Chapelle.—Lead and zinc ores. 100
- 8 Rhenish-Nassau Co., Stolberg, near Aix-la-Chapelle.—Lead ores. 100
- 9 Solenhofen Joint Stock Co., Solenhofen.
  - a Tiles for malt-house floors. 102
  - b Lithographic stones. 106
- 10 Zimmermann, Otto, Greussen, To-phus.—Tiles. 102
- 11 Stern Portland Cement Factory, Sietlin.—Portland cement. 103
- 12 Hiller, Otto, Berlin.—Mastic roofing and model roof. 103
- 13 Häuseler, Carl Sam., Hirschberg, Sil-sia.—Wood cement and model roof. 103
- 14 Scharlach, Louis, jr., Hamburg.—Roofing. 103
- 15 Vowohl Asphalt Works, Escher-schausen.—Asphalt mastic blocks. 103
- 16 Schindel, John Adam, Solenhofen.—Lithographic stones. 106
- 17 Apollinaré's Co., Ahnweiler.—Mineral waters. 107
- 17a Bisresborn Mineral Spring Co., Bisresborn.—Mineral waters. 107
- 18 Jungfer, A., Berlin.—Amber. 107
- 19 Stantien & Becker, Berlin.—Raw amber. 107

- 20 Managers of Friedrichshall Springs, C. Oppel & Co., Friedrichshall, near Hül-burghausen.—Friedrichshall natural bitter water. 107  
(For mill and grindstones, see Machinery Hall.)

## Metallurgical Products.

- 21 Borsig, A., Berlin.—Iron, cast steel, boiler plates, plates for fire boxes, etc. 111
- 22 Burbach Works, Burbach.—Rolled double T iron. 111
- 23 Krupp, Fr., Essen.—Wheels, pis-tons, flanges, rollers, springs, etc. 111

## COLLECTIVE EXHIBIT, SIEGER-LAND.—SPIEGELEISEN AND ORES.

- 24 Heinrichshütte, Au-on-Sieg.—Spie-gel iron. 111
- 25 Cologne Müsen Mining Co., Creuz-thal.—Spiegel iron. 111
- 26 Joint Stock Co., Charlottenhütte, Niederschelden.—Spiegel iron. 111
- 27 Wissen Mining & Smelting Co., Wissen.—Spiegel iron. 111
- 28 Lohmann & Söding, Witten.—Steel for tools and arms. 111
- 29 Westphalian Union Joint Stock Co. for Mining & for Iron & Wirework, Hamm.—Wire. 111

(The above exhibits of Metallurgical Products are installed in Machinery Hall.)

- 30 Royal Prussian Smelting Works of the Upper Harz, Clausthal.—Lead, cop-per, silver, zinc fumes, slags, drawings, etc. 111
- 31 Royal Prussian & Ducal Bruns-awick Smelting Works of the Lower Harz, Gaslar.—Gold, silver, lead, and copper composition. 111
- 32 Royal Prussian Smelting Works, Friedrichshütte.—Lead bars, slag, and drawings. 111
- 33 Hirsch, Aron, & Son, Brass Works at Neustadt-Eberswalde.—Seamless brass tubes, etc. 112
- 34 Joint Stock Association for Mining, & Lead & Zinc Manufactures, Stolberg, near Aix-la-Chapelle.—Lead and zinc plates, etc. 111
- 35 Ruffer & Co., Breslau.—Sheet zinc. 113
- 35a Rhenish-Nassau Co., Stolberg, near Aix-la-Chapelle.—Lead. 111

## Mining Engineering.

- 36 Nörr, Eugene, Berlin.—Drawings and description of a self-acting safety lamp. 120
- 37 Gödecke, Carl, Gelsenkirchen.—Plans of the Gelsenkirchen furnaces. 122

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## AUSTRIA.

*(South of Nave, Columns 23 to 28.)*

## Minerals, Ores, Stone, Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Imperial & Royal Metallurgy Direction, Idria.—Cinnabar. 100
- 2 Jugoviz, A., Klagenfurt.—Ore and mining products of Karnten. 100
- 3 Chief Mountain & Mining Administration, Pozoritta, Bukowina.—Pyrolusite for aniline pigments for soda factories, German silver ware, and manganese products. 100
- 4 Metallurgy & Mining Administration, Joachimsthal.—Meteoric specimens. 100
- 5 Goldschmidt, Louis A., Dubnik, Hungary.—Unpolished opals. 100
- 6 Nedwied & Son, Schlan, Bohemia.—Red chalk, red-lead pencils. 107

7 Saxlehner, Andreas, Budapest.—Hunyadi János mineral water. 107

8 Mineral Water Direction, Pullna, near Brülz, Bohemia.—Mineral water. 107

9 Loser Bros., Budapest.—Genuine mineral water from the Ofen-Rakocsy spring. 107

## Metallurgical Products.

10 Industry Association in Krain, Laibach.—Iron and steel mountain and mining works. Ferro-manganese and spiegel iron. 111

11 Imperial & Royal Metallurgy Direction, Idria.—Quicksilver. 113

## SWITZERLAND.

*(North of Nave, Columns 52 to 55.)*

## Minerals, Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Neuchatel Asphalte Co. (limited), Travers, Ct. Neuchâtel.—Natural and mastic asphalt. 101

*(The minerals illustrating the geological formations traversed by the St. Gotthard tunnel are classified in this catalogue, together with the other exhibits of the St. Gotthard Railroad Co., under Dept. III., Class 332.)*

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Metallurgical Products.

- 3 Bürgin Bros., Schaffhausen.—Phosphate of bronze, different compositions, with strength and fracture tests. 114

# BELGIUM.

(North of Nave, Columns 54 to 59.)

## Minerals, Metallurgical Products.

### Minerals, Ores, Stone, Mining Products.

- 1 Bleyberg es Montsen Joint Stock Co., Montzen, Province of Liège.—Zinc and lead ores. 100
- 2 Vincent Son, Basècles (Hainaut).—Samples of Basècles black marble pavements. 108
- 3 Sacquelen, F., Basècles near Tournai (Hainaut).—Specimens of Basècles blue and gray stone. 108
- 4 Ville de Spa (Communal Administration).—Trophy furniture, showing views of the city and environs, plans of mineral water-works, samples of these waters, articles of export, etc. The painting of this furniture was executed by Messrs. Boland, Chas., Broufort, H., Crahey, senior, G. I., Debrus, Alexandre, Debrus, Alexis, Krins, E., Marcette, Henri, and Reigler, L. 107

### Metallurgical Products.

- 4 Bonehill Bros., L'Esperance High Furnace Forge Foundry, Marchienne-au-Pont, near Charleroi.—Architectural iron. 111
- 5 Constant, Emile, Monceau-sur-Sambre, near Charleroi.—Patterns of building iron spring and web iron. 111
- 6 Mabille, Valère, Mariemont (Hainaut).—Manufactured iron, Kind Chaudron shaft-sinking apparatus. 111

- 7 Paris, Isaac Joseph, Marchiennes, near Charleroi.—Iron riveted beams for ship-building. 111
- 8 Charleroi Iron Manufacturing Joint Stock Co., Marchienne-au-Pont, near Charleroi.—Iron for building, etc. 111
- 9 Providence Forge Joint Stock Co., Marchienne-au-Pont, near Charleroi.—Iron for building, iron wheels without welding. 111
- 10 Forge and Rolling Mill Joint Stock Co., Régissa, near Huy.—Polished and unpolished sheet iron by wood and coke. 111
- 11 Angleur Steel Manufacturing Co., F. de Rossius, Pastor & Co., Renory, near Liège.—Bessemer cast steel products, rails, tires, axles, forge pieces, and rolled bars. 111
- 12 Jemmapes Forge Foundry & Rolling Mill Co., V. Demerbe & Co., Jemmapes (Hainaut).—Broken bar-banded iron, tramway rails, system of tramway rails on cast iron sleepers. 111
- 13 Bivort, Raymond, Henri, Arbre, Province of Namur.—Kettles and copper wire. 112
- 14 Bleyberg es Montsen Joint Stock Co., Montzen, near Verviers.—Prepared zinc and lead ore, potters' ore (pure galena) for glazing, pig lead for rolling mill, white lead and crystals, silver ore, block zinc for rolling, galvanizing, etc. 113

# NETHERLANDS.

(North of Nave, Columns 60 to 65.)

## Stone.

### Minerals, Ores, Stone, Mining Products.

- 1 Onderwater, H. F., Dordrecht.—Stones for pavement. 108
- 2 Van Verschuur & Van der Voort, Amsterdam.—Unpolished stones. 108

- 3 Borst & Roggenkamp, Delfsyl.—Portland cement stones, lithographic stones, oilstones, whetstones, grindstones, polishing material, and sand quartz; garnets, raw topazes, diamonds, tripoli, and corundum. 108

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# SWEDEN.

(North of Nave, Columns 6 to 11.)

## Ores, Stone, Metallurgical Products.

### Minerals, Ores, Stone, Mining Products.

- |  |   |
|--|---|
| 1 Adelsvärd, Baron Th., Atvidaberg.<br>—Copper ore. 100  | 24 Osterby & Strömbacka Iron Works,<br>Osterby.—Iron ores. 100                      |
| 2 Bofors Stock Co., Gullspang, Bofors.<br>—Iron ores. 100  | 25 Uddeholm Company, Rada.—Iron<br>ores. 100  |
| 3 Berg, Axel, Warby, Stockholm.—<br>Iron ores. 100   | 26 Larsson, P. M., Låsa, Rausa.—Iron<br>ores. 100                                   |
| 4 Berg, Gottfried, Warby, Stockholm.<br>—Zinc, galena, and nickel ores, pyrites. 100                     | 27 Sanóvikens Stock Co., Gefle.—Iron<br>ores. 100                                   |
| 5 Fagersta Iron & Steel Works,<br>Westanfors. 100  | 28 Schough, Robert, Lulea.—Iron and<br>copper ores. 100                             |
| a Iron ores. 100   | 29 Geological Survey of Sweden, Stock-<br>holm.—Geological collections. 100         |
| b Limestone. 103   | 30 Högånäs Coal Mining Co., Högånäs.<br>a Mineral coal. 101                         |
| 6 Swedish Iron Masters' Association,<br>Stockholm. 100   | b Fire clay, fire brick. 104  |
| a Collection of minerals. 100  | 31 Samuelson, S. H., Föskfors, Rada.<br>—Peat. 101                                  |
| c Maps and drawings. 335   | 32 Westerlund, A. F., Nybro, Kalmar.<br>—Peat. 101                                  |
| 6 Avesta Garpenbergs Stock Co.,<br>Avesta.—Iron ores. 100  | 33 Berg, Gottfried, Warby, Stockholm.<br>—Porphyry, serpentine, and marble. 102     |
| 7 Björneborgs Iron & Steel Works,<br>Björneborg.—Iron ores. 100  | 34 Klintberg, J. W., Wisby.—Marble<br>table slabs, jewelry, etc. 102                |
| 8 Degerfors Stock Co., Degerfors.—<br>Iron ores. 100   | 35 Kullgrens, C. A., Widow, Uddevalla.<br>—Articles of polished granite. 102        |
| 9 Ekman, Carl, Finspong.—Iron<br>ores. 100   | 36 New Marble Works, Norrköping.—<br>Manufactured marble. 102                       |
| 10 Hermansson, C. F., Count von,<br>Ferna.—Iron ores. 100  | 37 Scanian Cement Co., Malmö.—Port-<br>land cement, raw materials and products. 103 |
| 11 Hofors & Hammarby Iron Works,<br>Gefle.—Iron ores. 100  | 38 Rörstrand Stock Co., Stockholm.—<br>Feldspar. 104                                |
| 12 Laxå Norn Stock Co., Kåfala.—<br>Iron ores. 100   | 39 Gottland Grindstone Co., Burgsvik.<br>—Grindstones. 104                          |
| 13 Laxa Iron Works Co., Laxa.—Iron<br>ores. 100  | 39a Karlson, Gust & Martin, Lugnas.—<br>Grindstone. 106                             |
| 14 Leasjöfors Iron & Steel Co., Lang-<br>banshyttan. 100   | 40 Berg, Gottfried, Warby, Stockholm.<br>a Graphite. 105                            |
| a Iron ores. 100   | b Grindstones. 106  |
| b Hausmannite and limestone. 103   | c Vivianite. 107  |
| 15 Lindberg, Lars, Kohlsva.—Iron<br>ores. 100  | 41 Berg, Chr. Lud., Eriksberg, Stock-<br>holm.—Mineral waters. 107                  |
| 16 Löfvenskiöld, Salomon, Nissafors,<br>Jönköping.—Iron ores. 100  | 42 Mineral Water Stock Co., Stock-<br>holm.—Mineral waters. 107                     |
| 17 Ramnäs Iron Works Co., Ramnäs.—<br>Iron ores. 100   |   |
| 18 Rettig, C. A., Kilafors, Gefle.—Iron<br>ores. 100   |   |
| 19 Schiashytte-Molnebo Iron Works,<br>Morgongåfva.—Iron ores, krebelite, lin-<br>c ores, and galena. 102 |   |
| 20 Stockenström, Axel von, Åker,<br>Mariefred.—Iron ores. 100  |   |
| 21 Stora Kopparbergs Bergslag, Stock-<br>holm.—Iron ores. 100  |   |
| 22 Sundström, J. O., Charlottenberg.—<br>Iron ores. 100  |   |
| 23 New Gellivara Company (limited),<br>Lulea.—Iron ores. 100   |   |

### Metallurgical Products.

- |   |
|---|
| 43 Bofors Stock Co., Gullspang, Bofors.<br>—Pig iron, blooms, bar iron, wire rods, and<br>iron plate. 111   |
| 43a Ramnäs Stock Co., Ramnäs.—Pig<br>and bar iron; slag. 111  |
| 44 Fagersta Stock Co., Westanfors.—<br>Pig iron, Bessemer steel ingots, bars,<br>plates, etc.; steel samples, showing the<br>strength of the steel. 111 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.

Metallurgical Products.

45 Schissbyttan-Molnebo Manufacturing Co., Morgongåfva.—Spiegeleisen. 111

46 Göteborgs Mechanical Works Stock Co., Göteborg.—Crown of a flue. 111

47 Laxa Iron Works, Laxa.—Pig iron, blooms, and bar iron. 111

COLLECTIVE EXHIBIT OF IRON MANUFACTURERS, STOCKHOLM.

48 Ankarsrum Works, Ankarsrum.—Pig iron, blooms, iron bars, wire rods, and railway crossings. 111

49 Avesta Garpenberg Stock Co., Avesta.—Pig iron, blooms, and bar iron. 111

50 Björneborgs Iron & Steel Works, Björneborg.—Pig iron, Bessemer steel ingots, and manufactured Bessemer steel. 111

51 Degerfors Stock Co., Degerfors, Wernland.—Pig iron, blooms, wire rods, and plate. 111

52 Ekman, Carl, Finspong.—Pig iron for guns, malleable blooms, and bar iron. 111

53 Gysinge Iron Works, Gysinge.—Iron in the pig and bars, with specimens of slag. 111

54 Hermansson, C. F., Count von, Ferna, Bernshammar.—Pig iron, spiegeleisen, and bar iron. 111

55 Hofors & Hammarby, Hammarby, Storsvik, Gefle.—Pig iron, blooms, and bars, with specimens of slag. 111

56 Larsbo, Norns, Stock Co., Kafalla.—Pig, bar, and angle iron; blooms. 111

57 Leasjöfors Iron & Steel Co., Filipstad.—Pig iron, ingots of Bessemer and Martin steel, bars, wires, and wire rope of the same material. 111

58 Lindberg Lars, Kohlsva.—Pig iron, bar iron, and wire rods. 111

59 Lövvenakiöld, Salomon, Nissafors, Jönköping.—Iron in the pig and bars. 111

60 Rettig, C. A., Kilafors, Söderhamn.—Pig and bar iron. 111

61 Stockenström, Axel von, Mariefred.—Pig iron for malleable iron. 111

62 Bergslag Iron Works, Stockholm.—Pig iron, Bessemer ingots, blooms, bar iron, and samples of iron showing the quality. 111

63 Sundström, J. O., Charlottenberg.—Pig and bar iron; spikes. 111

64 New Gellivara Company (limited), Lulea.—Pig and bar iron; nails. 111

65 Osterby & Strömbacka, Dannemora.—Pig iron, Bessemer steel ingots and bars, blister steel, crucible cast steel, and bar iron. 111

66 Surahammars Iron Co., Surahammar.—Iron plate, puddled iron, and steel bars, railway wagon wheels and axles. 111

67 Uddeholms Stock Co. (limited), Rada.—Pig iron, ingots of Bessemer and Martin steel, and iron in bars, springs, etc. 111

68 Larsson, P. M., Låsa, Rällsa.—Samples of pig iron. 111

69 Motala Mechanical Co., Motala.—Iron and steel, in bars, plates, and sheets, with products of working. 111

70 Sandvikens Iron Works (limited), Sandviken.—Pig iron, Bessemer steel ingots, forgings for engines, steamers, etc. 111

71 Adelswärd, Baron, Th., Atvidaberg.—Copper in ingots, with specimens illustrating its various stages of production. 112

72 Skultuna Stock Co., Westeras.  
a Copper, with products of working. 112  
b Brass in different stages of production. 114

(For rails, railway and wagon wheels, tires, axles, etc., see Class 573, Machinery Hall.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## NORWAY.

*(North of Nave, Columns 4 to 7.)*

## Ores, Stone, Metallurgical Products.

**Minerals, Ores, Stone, Mining Products.**

- 1 Geological Survey of Southern Norway, Director Th. Kierulf, Christiania.
- a Stones, eruptive rocks, leading strata, constituents of coarse granite dykes. 100
- b Manuscript maps, natural sections, generalized representations, printed maps. 335
- 2 Fasmer, I. H., & Son, Bergen.—Feldspar. 100
- 3 Hinderager Mining Co., Bergen.—Copper ore, pyrites. 100
- 4 Hoyem, Andr., Bergen.—Titanium iron ore. 100
- 5 Kongsberg Silver Mines, Kongsberg.—Ores, crystals. 100
- 5a Dahll, J., Kragerø.—Apatite ore. 100
- 6 Bamble Nickel Mines, Johan Dahll, Kragerø.—Samples of nickel ores, with specimens illustrative of the melting process. 100
- 7 Glorud Nickel Co., F. H. Frolich & Son, Christiania.—Nickel ores. 100
- 7a Geological Survey of Southern Norway, Assistant Geologists W. Brügger and H. Reusch, Christiania.
- a Newly-discovered crystals. 100
- b Contents of giant-kettles, spiral marked interior grinding-stones. 106

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.

- 7b Ringerige's Nickel Works.—Nickel ores, with rocks and specimens of the smelting process. 100
- 7c Rom Nickel Works.—Nickel ores, with rocks and specimens of the smelting process. 100
- 8 Luttensee, Georg, Christiania.—Quarry stone for street pavement and curbstones. 102
- 9 Moestue & Co., Thv., Christiania.—Slates for tables, roofs, and floors, from Slidre quarries. 102
- 10 Pettersen, Karl, Tromsø.—Granite, labbro and other massives, raw and polished. 102
- 11 Frolich & Son, F. H., Christiania.—Collection of Norwegian apatite ores. 103
- 12 Birch, F., Selboe.—Millstones. 106
- 14 Christiania Millstones Manufacturing Co., Christiania.—Millstones. 106
- 15 Lönseth, Fred., Christiania.—Millstones from Sælbo, flint millstones. 106

**Metallurgical Products.**

- 16 Kongsberg Silver Mines, Kongsberg.—Silver in bars and granulated silver. 110
- 17 Cathrineholms Iron Works & Foundry, Fredrikshald.
- a Stoves and other wrought iron. 223
- b Anchors, chains. 284

## ITALY.

(North of Nave, Columns 1 to 5.)

## Minerals, Stone, Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Tagliavia, Francesco, & Co., Messina.—Collection of minerals. 100
- 2 Fontana Brothers, Luserna, Turin.—Flagstones. 102
- 3 Tassi, Peter, Leghorn.—Yellow marble and alabaster. 102
- 4 Chamber of Commerce & Arts, Sienna.—Marble and alabaster stone. 102
- 5 Stock Company for Manufacturing Bricks, Feggio, Emilia.—Cement, limestone. 103
- 6 Crispo, Moncada Carlo, Catania.—Limestone. 103
- 7 Maccagnani, Uliasse, Bologna.—Aromatic earth of Cattù. 104
- 8 Bolari & Yellow Earth Co., Sienna.—Bolari and yellow earth, earth for coloring. 104
- 9 Furse Bros., & Co., Rome.—Bolari earth of Sienna. 104
- 10 Molino, Luigi, Genoa.—Lithographic stone. 106
- 11 Scammano, Cav. Michele, Catania.—Cedrats. 107

- 12 Birindelli, Carlo, Florence.—Colall water. 107
- 13 Spedalleri, Ba Felice, Catania.—Sulphur. 107
- 14 Aristide, Count, Castrocaro.—Mineral waters. 107
- 15 Romano, Gaetano, Palermo.—Sulphur. 107
- 16 Scavo Vita Brothers, Catania.—Sulphur. 107
- 17 Dily, Edoardo, Catania.—Sulphur. 107
- 18 Ardizzone, Francesco, Catania.—Sulphur. 107
- 19 Pennini, Baron of Floristallo, Catania.—Sulphur. 107
- 20 Cesena Sulphur Co. (limited), Cesena.—Raw and refined sulphur. 107
- 21 Bartolini dott Cesare, Sienna.—Fossil flour. 107

## Metallurgical Products.

- 22 Fornara, Gio., & Co., Turin.—Wire. 111
- 23 Ponsard & Gigli, Florence.—Iron, manganese. 111

## BRAZIL.

(North of Nave, Columns 58 to 61.)

## Minerals, Stone.

## Minerals, Ores, Stone, Mining Products.

- 1 Province of Paraná.
  - a Iron ores. 100
  - b Clay, argil, and schist. 104
  - c Alkaline waters. 107
- 2 Province of San Paulo.—Iron ores. 100
- 3 Ypanema Iron Works.—Iron ores. 100
- 4 Cunha Bettencourt, M. J. da.—Minerals. 100
- 5 Gorceix, H.—Rocks and minerals. 100

## 6 Commission General for the National Exhibition.

- a Ores. 100
- b Coal. 101
- c Marbles. 102
- d Clay, argil, and schist. 105
- e Minerals, showing gold and diamond formations. 106
- 7 National Museum.
  - a Minerals. 100
  - b Coal. 101
  - c Marbles. 102
  - d Gems. 106

For classes of exhibits, indicated by number at end of entries, see Classification, pp 27-45.

### Oils, Blacking, Boots and Shoes.

8	Goes, J. T. Pereira de.—Minerals.	100
9	Lemos, J. A. de.—Minerals.	100
10	Correia, J. Severo.—Calcareous rocks, galena, and pyrites.	100
11	Athayde, M. E. de S.—Mica.	100
12	Moraes, Rozeira, M. G. de.—Martial pyrites.	100
13	Mendes, J. O.	
	α Sulphur.	100
	β Calcareous stalactites.	100
14	Costa Netto, J. da.—Fossils.	100
15	Province of San Pedro do Sul.—Coal.	101
16	Villa Franca, Baron of.—Peat.	101
17	Andrade, A. R. L.—Bituminous coal.	101
18	Barbacena, Viscount of.—Coal.	101
19	Province of Sancta Catherina.	
	α Coal.	101
	β Marble.	102
20	Lopez, F. J. A., & Co.—Bituminous schist.	101
21	Carvalho, A. P. S.—Bituminous schist.	101
22	Muricy, J. C. da Silva.	
	α Anthracite and bituminous coal.	101
	β Quartz, agates, and grindstones.	102
23	Steraux, E.—Marbles.	102
24	Leao, A. D.	
	α Calcareous siates and stalactites.	102
	β Rock crystal and agates.	106
25	Coritiba Museum.	
	α Slates.	102
	β Violaceous quartz.	106
26	Osternack, Charles.—Virgin lime.	103
27	Juparana, Baron of, & Nogueira da Gama.—Calcareous specimens.	103
28	Freitas, T. Teixeira de.—Lime.	103
29	Cardoso, A. Nunes.—Lime from oyster-shells.	103
30	Portugal, F. P. de Avedo.—Calcareous rocks.	103
31	Commission of S. Joao d' El Rei.—Plaster of Paris in powder.	103
32	Nhorinho, J. S. da Silva.—Lime.	103
33	Bento, Dr.—Lime.	103
34	Lendenberg, L. B.—Lime.	103
35	Rezende, C. Xavier.—Stalactites.	103
36	Colony of Assungin.—Saponaceous clay.	104
37	Gonzaga, E. J.—Clays.	104
38	Gonsalves, J.—Calcined kaolin.	104
39	Correa, G. Lourenço.—Clay.	104
40	Wirmond, E. E.—Yellow argil.	104
41	Mota, C. S. da.—Tagua (rose-colored argil).	104
42	Gomes, T. G. C.—Argil.	104
43	Figueredo, D. J.—Argil and plastics.	104
44	Magalhaes, F. T. S.—Argil and colored clay.	104
45	Andrade, J. F. de.—Colored clay.	104
46	District of Formiga.—Argil.	104

47	Travanca, A.—Argil.	104
48	Schimmelpfing, A.—Kaolin.	104
49	Ribas, M. de Sa.—Alum.	106
50	Ferreira, Domingos F.—Rough and cut diamonds.	106
51	Silva, L. Machado da.—Quartz prisms.	106
52	Heyd, Theodoro.—Grindstones.	106
53	Siqueira, P. Lustosa de.—Agates.	106
54	Colony of Mucury.—Precious stones.	106
55	Cortez, P. de Siqueira.—Amethysts.	106
56	Asevedo, D. J. Santos.—Diamonds.	106
57	Maclel, D. Ferreira.—Sulphurous water.	106

### Metallurgical Products.

58	Commission General for the National Exhibition.	
a	Gold.	110
b	Iron.	111
c	Mercury.	113
59	Province of Paraná.—Specimens of gold veins.	110
60	Tourinho, F. A. M.—Magnetic gold.	110
61	Camara, J. Ewbank da.—Auriferous stones.	110
62	Leone, F. M., & Lemos, P. L.—Auriferous minerals.	110
63	Camara, F. T. Vieyra da.—Gold-dust.	110
64	Pórtugol, F. P. de A.—Gold-dust.	110
65	Province of Pernambuco.—Native iron.	110
66	National Museum.	
a	Iron.	111
b	Copper.	112
67	Province of Sancta Catherina.	
a	Iron.	111
b	Nickel.	114
68	Cruz, B. A. da.—Magnetic iron.	111
69	Lellian, Ernesto.—Magnetic iron.	111
70	Ypanema Iron Works.—Bar iron.	111
71	Silva, M. A. Machado da.—Oligistic iron.	111
72	Oliveira, A. C. de.—Oligistic iron.	111
73	Barboda, Nemes.—Oligistic iron.	111
74	Aranjo, J. A. Vieyra de.—Oligistic iron.	111
75	Ledo, Agostinbo E. de.—Oligistic iron.	111
76	Supplicity, J. Francisco.—Pyrites and sulphuret of iron.	111
77	Gasse, F.—Lead foils from Rio de Janeiro.	113

## Mine Engineering, Models, Maps, and Sections.

<b>78 Geological Commission.—Geological photographs.</b>	<b>120</b>
<b>79 Gorceix, H.—Geological map of the Chapadao.</b>	<b>120</b>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



# ARGENTINE REPUBLIC.

(Nave to South Avenue, Columns 2 to 5.)

## Minerals, Ores, Stone.

### Minerals, Ores, Stone, Mining Products.

- 1 Raymond, Hipolito, Province of Mendoza.—Collection of minerals. 100
- 2 Provincial Commission, Province of Mendoza.—Collection of minerals. 100
- 3 Lemos, Abraham, Province of Mendoza.—Minerals for paints. 100
- 4 Treloar, William A., Province of La Rioja.—Collection of minerals. 100
- 5 Almonacid & Parchappe, Province of La Rioja.—Collection of minerals. 100
- 6 Illanes, Manuel I., Province of La Rioja.—Minerals of Cerro de Vinchina. 100
- 7 Bascuñan, Francisco, Province of La Rioja.—Minerals. 100
- 8 Provincial Commission, Province of La Rioja.
  - a Minerals. 100
  - b Lime and common gypsum. 103
  - c White chalk and specimens of colored clay used in the manufacture of pottery and paints; colored chalk. 104
- 9 Gules, Martin, Province of La Rioja.
  - a Minerals of Olta. 100
  - b Calcined lime; gypsum. 103
  - c Chalk. 104
  - d Whetstones of "La Torre," in their native state; flint. 106
- 10 Vega, Daniel de la, Province of La Rioja.—A petrification. 100
- 11 Schröder, Theodore, Province of La Rioja.—Copper ore. 100
- 12 Gifford, Senor, Province of La Rioja.—Silver ore. 100
- 12a Bevan, Eduardo A., Province of La Rioja.—Ores. 100
- 13 Aguilar, Francisco D., Province of San Juan.
  - a Minerals. 100
  - b Mineral waters. 107
- 14 Government of the Province of San Juan.—Collection of minerals. 100
- 15 Provincial Commission, Province of San Luis.
  - a Collection of minerals. 100
  - b Stone pestle used by the Indians to grind corn and other grains; stone pan made by Indians, etc. 108
- 16 Mettler, A., Province of Catamarca.—Minerals. 100
- 17 Romay, Gabriel, Province of Catamarca.—Iron and antimony ores. 100
- 17a Zorilla, Benjamin, Province of Salta.—Silver ore. 100
- 18 Provincial Sub-commission of Tinogasta, Province of Catamarca.—Ores of iron, lead, copper, silver, etc. 100
- 19 Galindez, Clásico, Province of Catamarca.—Silver and copper ore. 100
- 20 Villafañe, Tristan, Province of Catamarca.—Silver-bearing galena. 100
- 20a Bedoya, Segundo, Province of Salta.—Silver ore. 100
- 21 Resoagli, Luis, Province of Corrientes.—Quartz, flint, agate, etc. 100
- 22 Mansilla, Manuel, Province of Corrientes.—Quartz, agate, copper ore, and mica. 100
- 23 Galarraga, E. G. de, Province of Corrientes.—Crystal rock. 100
- 23a Tula, Nabor, Province of Catamarca.—Copper ore from the Cerro Negro. 100
- 24 Sicard, Juana G. de, Province of Corrientes.—Horn-shaped stone. 100
- 25 Porta, Felix, Province of Corrientes.—Agglomeration of small stones. 100
- 26 Acosta de Quirolo, Josefa, Province of Corrientes.—Crystal rock. 100
- 27 Cufia, Americo, Province of Corrientes.—Agate. 100
- 27a Molina & Carranza, Province of Catamarca.—Ore from the Rosario mine. 100
- 28 Cabral y Melo, José Maria, Province of Corrientes.—Crystal rock and flint. 100
- 28a Salcedo, Uladialan M., Province of Catamarca.—Copper and silver ore. 100
- 29 Pujol, Nicanor, Province of Corrientes.—Iron ore. 100
- 30 Córdoba University, Province of Córdoba.—Collection of minerals. 100
- 30a Muro, Froilan, Province of Catamarca.—Iron and copper ore, copperas, and alum. 100
- 31 Fragneiro, José M., Province of Córdoba.—Lead containing silver. 100
- 32 Provincial Commission, Province of Córdoba.
  - a Lead containing silver, gypsum, various minerals. 100
  - b Marble. 102
  - c Whetstones. 106
- 33 Vasquez, Lucrecio, Province of Córdoba.—Emeralds; round-shaped stone made by Indians. 100
- 34 MacDowell, N., Province of Córdoba.—Minerals. 100
- 35 Olmos, José V., Province of Córdoba.—Minerals. 100
- 36 Provincial Commission, Province of Salta.
  - a Galena, silver, and iron ores. 100
  - b Wrought stone for table top. 102
  - c Sulphate of lime. 103
  - d Kaolin. 104

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-35.

## Minerals, Ores, Stone.

- 37 Echevarria, Cecilio, Province of Santa Fé.—Minerals; quartz and agates of Alto Uruguay. 100
- 38 Rap, Eugenio, Province of Tucumán.—Collection of minerals. 100
- 39 Government of the Province of Jujui.—Silver ore from Tilcara. 100
- 40 Sub-commission of the Department of Diamante, Province of Entre Ríos.—  
*a* Stones found on the shores of the Plata y Uruguay. 100  
*b* Hydraulic cementstones and cement, lime, artificial stone, petrified wood, etc. 103
- 40*a* Provincial Commission, Province of Catamarca.  
*a* Quartz, garnets, manganese, etc. 100  
*b* Coal. 101  
*c* Soapstone from Ancasti. 102  
*d* Water-lime, gypsum. 103  
*e* Colored clay, soapstone in powder, kaolin, etc. 104  
*f* Mineral waters. 107
- 40*b* Elordi, Louis, Province of Buenos Ayres.—Copper ore from Patagones. 100
- 41 Arguello, David, Province of Córdoba.  
*a* Silver ore. 100  
*b* Anthracite coal. 101
- 42 Galvan, Federico, Province of La Rioja.—Coal from Tumbillos. 101
- 43 Roman, Gabriel, Province of Catamarca.—Coal. 101
- 44 Valdes, Emiliano, & Cipriano, Province of Buenos Ayres.  
*a* Colored and other stones from Tandil. 102  
*b* Black and white vegetable clay from Balcarce. 104  
*c* Sand and whetstones. 106
- 45 Olmos, José V., Province of Córdoba.—White marble. 102
- 46 Salas, Manuel M., Province of Corrientes.—Marble and crystallized stones. 102
- 47 Santos, Francisco A., de los, Province of Corrientes.—Hollow unpolished stone. 102
- 48 Hurley, Tomás, Province of Catamarca.—Granites; copper and black bronzes; antique pieces of stone discovered in the abandoned mine of Ortiz. 102
- 49 Provincial Commission, Province of Santiago del Estero.  
*a* Dressed stones from the Sierra de Guaya-cán. 102  
*b* Crystallized and common gypsum. 103  
*c* Colored clay and saltpetre. 104  
*d* Mineral and sarsaparilla waters. 107
- 50 Provincial Commission, Province of San Juan.—Building stone. 102
- 51 Avellaneda, Nicolas, Province of Córdoba.—Marble. 102
- 52 Segura, Rufino, Province of Catamarca.—Soapstone, flagstone. 102
- 53 Sub-commission of Andalgalá, Province of Catamarca.—Soapstone from Belén. 102
- 54 Riso, Isidoro, Province of Catamarca.  
*a* Soapstone. 102  
*b* Water lime. 103
- 55 Herrera, Nicolas, Province of Catamarca.—Slate. 102
- 56 Cornejo, Melchora, T., Province of Salta.  
*a* Carbonate of lime. 103  
*b* Mineral waters. 107
- 57 Saravia, Pablo, Province of Salta.—Sulphate of lime. 103
- 58 Fornasari, R., & Facino, H., Province of Entre Ríos.—Hydraulic cement, artificial stones. 103
- 59 Commission of Paraná, Province of Entre Ríos.  
*a* Paving-stones, limestones, lime, sulphate of lime, petrified oyster-shells, etc. 103  
*b* Clay, fine sand, calcareous clay, containing gold and silver. 104  
*c* Tripoli. 106
- 60 Garlivo, N., Province of Entre Ríos.—Artificial stone. 103
- 61 Peretti, Santiago, Province of Salta.—Dressed stone and carbonate of lime. 103
- 62 Solá, Ramon, Province of Entre Ríos.—Gypsum. 103
- 64 Justice of the Peace of Ensenada, Province of Buenos Ayres.—Lime made from shells. 103
- 65 Pedruncini, Juan, Province of Buenos Ayres.—Shell-lime. 103
- 66 Valdes, Nicasio, Province of Buenos Ayres.  
*a* Lime from Balcarce. 103  
*b* Red clay. 104
- 67 Ifiguez, Manuel A., Province of Buenos Ayres.—Limestone from Tandil. 103
- 68 Commission of Water Works, Province of Buenos Ayres.  
*a* Lime-shells, calcareous stones, raw and burnt cement, cement in shape of bricks. 103  
*b* Clay. 104
- 69 Welsh, Miguel, Province of Buenos Ayres.—Limestone, quicklime, slaked lime. 103
- 70 Caetani, Vicente, Province of Buenos Ayres.—Artificial marble. 103
- 71 Sandrot, José, Province of Buenos Ayres.—Artificial stones. 103
- 72 Justice of the Peace of Patagones, Province of Buenos Ayres.—Gypsum, etc. 103
- 73 Ibañez, P., Province of Catamarca.—Stalagmitical lime. 103
- 74 Provincial Commission, Province of Tucumán.  
*a* Black, yellow, and white limestone, common gypsum. 103  
*b* White clay. 104
- 75 Paroni, Andrés, Province of Santa Fé.—Hydraulic cement. 103
- 76 Provincial Commission, Province of Corrientes.—Calcareous stones from Itati. 103
- 77 Aguilar, Francisco D., Province of San Juan.—Hydraulic lime. 103
- 78 Gache, Manuel, Province of Buenos Ayres.—Gypsum from Rio Salado. 103
- 78*a* Carenzo, Nicholas, Province of Salta.—Kaolin, white clay, and chalk. 104
- 79 Santa Cruz-Simon de, Province of Entre Ríos.—Sand from Ibicui. 104
- 79*a* Tamayo, Sidney, Province of Salta.—White clays. 104
- 80 Arias, Hilarion, Province of Salta.—Sulphate of lime. 104
- 81 Lopez, Feliciano, Province of Corrientes.—Clay for the manufacture of crockery, tiles, and bricks, yellow stone for coloring and paint. 104

## Minerals, Stone, Metallurgical Products.

- 83 Sub-commission of Bella Vista, Province of Corrientes.—Stone containing red and yellow coloring substances; clays. 104
- 84 Calderon, Pedro, Province of Entre Rios.—Vegetable clay. 104
- 85 Fontes, V. M., & Negra, S., Province of Entre Rios.—Clay for whitewashing. 104
- 86 Basan, Abel, Province of La Rioja.—Refractory bricks. 104
- 87 Barros, José, Province of La Rioja.—Refractory bricks. 104
- 89 Justice of the Peace of Zarate, Province of Buenos Ayres.—Black and ferruginous clays. 104
- 90 Lobo, Tristan, Province of Catamarca.—Chalk clay, tiles, and bricks. 104
- 91 Lafone Quevedo, Samuel A., Province of Catamarca.  
a White clay for bricks; refractory bricks. 104  
b Hard fossil-ground quartz. 106
- 92 Caballero, Eugenio, Province of Salta.—Graphite. 105
- 93 Medina, Luis R., Province of Catamarca.—Whetstones from Concepcion. 106
- 94 Perez, Luisa, Province of La Rioja.—Mineral water. 107
- 96 Patron Bros., Province of Salta.—Mineral waters. 107
- 97 Schmidt, Antonio, Province of San Luis.—Mineral waters. 107
- 98 Escobar, Juan de D., Province of San Luis.—White-stone water. 107
- 99 Sub-commission of the Colony of San Carlos, Province of Santa Fé.—Veg-etable clay. 107
- 100 Otamendi, Carlos, Province of Buenos Ayres.—Shells from the coast of Ealcarce. 107

## Metallurgical Products.

- 101 Gainza, Martin de, Province of Buenos Ayres.—Gold from Patagones. 110
- 102 Nell, Federico, Province of San Luis.—Gold and washed gold. 110
- 103 Bertram & Co., Province of San Luis.—Gold from the Descubridora mine. 110
- 104 Provincial Commission, Province of San Luis.—Gold from La Carolina mine. 110
- 105 Lafone Quevedo, Samuel A., Province of Catamarca.—Copper ingots. 111

## CHILI.

(North of Nave, Columns 3 to 5.)

## Minerals, Ores, Stone, Metallurgical Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Government of Chili.—Silver and copper ores, and other minerals. 100
- 2 Sere, Edouard, Santiago.—Minerals. 100
- 3 Escobar, E., Copiapo.—Gold, silver, and copper ores, and other valuable minerals. 100
- 4 Urmeneta & Errasuriz, Santiago.—Copper ores from Tamagua. 100
- 5 Escudero, R., Santiago.—Stone. 102

- 6 Sanchez, Francisco, Talca.—Carved stone from Talca. 102
- 7 Cadiz, Jose, Gabriel, Santiago.—  
a Artificial marble balustrade, mantel, pilasters, and columns. 103  
b Natural and powdered gypsum. 107

## Metallurgical Products.

- 8 Government of Chili.—Copper in ingots. 112

## Mining Engineering.

- 9 Errasuriz, Maximiano, Santiago.—Strata of coal mine in Lebu. 102

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## MEXICO.

*(North of Nave, Columns 64 to 67.)*

## Minerals, Ores, Stone, Metallurgical Products.

**Minerals, Ores, Stone, Mining Products.**

- |  |     |   |     |
|--|-----|---|-----|
| 1 Ochva, Gaspen, Sanchez, City of Mexico.—Sulphur from the Volcano Popocatepetl.       | 100 | 14 Quebradella Company, Zacatecas City.—Minerals.                             | 100 |
| 2 Mexican Mining Society, City of Mexico.—Minerals and rocks.                          | 100 | 15 Mala Noche Company, Zacatecas City.—Minerals.                              | 100 |
| 3 School of Engineers, City of Mexico.—Minerals.                                       | 100 | 16 Ponce, Juan, Zacatecas City.—Minerals.                                     | 100 |
| 4 National Museum, City of Mexico.—Minerals and rocks.                                 | 100 | 17 Romirez, S. & C. J., City of Mexico.—Rocks.                                | 100 |
| 5 Barcena, Mariano, City of Mexico.—Livingstonite.                                     | 100 | 18 Barcena, Manimo, City of Mexico.—Fossils, rocks, and geological maps.      | 100 |
| 6 Folsa, M. José, Pregones, State of Guerrero.—Quicksilver ores.                       | 100 | 19 Farrugia, Federico, State of Hidalgo.—Minerals and metallurgical products. | 100 |
| 7 Natural History Society, City of Mexico.—Minerals.                                   | 100 | 20 Zenteno, Estevan, Fempoal, Vera Cruz.—Coal.                                | 101 |
| 8 Government of the State of Durango, Durango City.—Iron ores.                         | 100 | 21 Gutierrez, Julian, & Co., City of Mexico.—Marble from the State of Puebla. | 102 |
| 8a Muller, N., Chihuahua City.—Metallurgical iron.                                     | 100 | 22 Bocanegra, S., State of San Luis Potosi.—Marbles.                          | 102 |
| 9 Soto, Mayor C., State of Michoacan.—Minerals from the mineral district of Angangueo. | 100 | 23 State Government of Hidalgo.—Argils.                                       | 104 |
| 10 Rull, Miguel, City of Mexico.—Minerals.   | 100 |   |     |
| 10a Corcuera, Manuel, State of Jalisco.—Iron ores.                                     | 100 |   |     |
| 11 Real Del Monte Company.—Minerals.   | 100 |   |     |
| 12 State Government of Oaxaca.—Minerals.   | 100 |   |     |
| 13 San Rafael Company.—Minerals from Zacatecas City.                                   | 100 |   |     |

**Metallurgical Products.**

- |  |     |
|--|-----|
| 24 Bermegillo, Pio, State of Michoacan.—Cake of silver from Argangueo. | 110 |
| 25 Encarnacion Company.—Wrought and cast iron.                         | 111 |
| 26 Guadalupe Company.—Wrought and cast iron.                           | 111 |
| 27 Esperon, José, Oaxaca City.—Wrought and cast iron.                  | 111 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## SPAIN.

(South of Nave, Columns 16 to 18.)

## Minerals, Ores, Stone.

- |  |  |
|--|--|
| <p>1 Arrivillaga, Agustín, Fondón, Province of Almería.—Galena. 100</p> <p>2 Fernandez, Diego, Cuevas, Province of Almería.—Argentiferous galena and barites. 100</p> <p>3 Campos, Francisco, Fondón, Province of Almería.—Laminated galena. 100</p> <p>4 Montoro, Francisco, Vera, Province of Almería.—Laminated galena. 100</p> <p>5 Bachiller, Guillermo, Cuevas, Province of Almería.—Argentiferous galena with iron pyrites. 100</p> <p>6 Cerezuelo, Gonzalo, Berja, Province of Almería.—Laminated galena. 100</p> <p>7 Gonzales, Gabriel, Laujar, Province of Almería.—Laminated galena. 100</p> <p>8 Terriza, José, Berja, Province of Almería.—Laminated galena. 100</p> <p>9 Rapalo, José, Almería, Province of Almería.—Galena. 100</p> <p>10 Olmo, José del, Berja, Province of Almería.—Galena, stained with minium. 100</p> <p>11 Cavanillas, Juan, Cuevas, Province of Almería.—Argentiferous galena. 100</p> <p>12 Corrello, Rafael, Almozita, Province of Almería.—Galena. 100</p> <p>13 Abad, Jerónimo, Níjar, Province of Almería.—Pyrolusite. 100</p> <p>14 Ayala, Antonio, Lucar, Province of Almería.—Steatite. 100</p> <p>15 Padilla, Francisco, Níjar, Province of Almería.—Calamine and carbonate of lead. 100</p> <p>16 Blanco, Prudencio, Alcolea, Province of Almería.—Gray calamine. 100</p> <p>17 Duran, Estéban, Almería.—Oxide of copper and calamine. 100</p> <p>18 Ramirez, Luis, Lucar, Province of Almería.—Black oxide of cobalt. 100</p> <p>19 Rio, Eustaquio, Huercal-Overa, Province of Almería.—Arseniate of cobalt. 100</p> <p>20 Real, José, Almería.—Carbonate of lead. 100</p> <p>21 Gomez, Crisanto de, Níjar, Province of Almería.—Carbonate of lead. 100</p> <p>22 Trell, Miguel del, Berja, Province of Almería.—Carbonate of calamine. 100</p> <p>23 Daza y Ruiz, Francisco, Purchena, Province of Almería.—Iron ore. 100</p> <p>23<sup>a</sup> Daza y Ruiz, Seron, Province of Almería.—Iron ore. 100</p> <p>23<sup>b</sup> Daza y Ruiz, Lucar, Province of Almería.—Cinnabar ore and cobalt. 100</p> <p>24 Vivas Asqueros, Antonio, Pechina, Province of Almería.—Iron ore. 100</p> | <p>25 Linares, Clemente, Albánchez, Province of Almería.—Iron ore. 100</p> <p>26 Villalobos Brothers, Berja, Province of Almería.—Sulphate of lead. 100</p> <p>27 Hernandez, Secundino, Feria, Province of Badajoz.—Iron ores. 100</p> <p>28 Successful Society, Alconchel Chelos, Province of Badajoz.—Chakopirita. 100</p> <p>29 Lafite &amp; Co., Castuera, Province of Badajoz.—Galena and argentiferous lead. 100</p> <p>30 Mateos y Morato, Santiago, Azuaga, Province of Badajoz.—Sulphate of lead. 100</p> <p>31 Grappin, G. de, Llerena, Province of Badajoz.—Galena. 100</p> <p>31<sup>a</sup> Grappin, G. de, Malpartida, Province of Cáceres.—Phosphate of lime. 100</p> <p>31<sup>b</sup> Grappin, G. de, Aldeacentenera, Province of Cáceres.—Copper. 100</p> <p>31<sup>c</sup> Grappin, G. de, various towns of the province of Cáceres.—Collection of ores. 100</p> <p>32 Martinez de Santa Maria, Juan, Burguillos, Province of Badajoz.—Magnetic iron ore. 100</p> <p>33 Lligé &amp; de Planell, Juan, Gabá y del Figaró, Province of Barcelona.—Iron ore with manganese. 100</p> <p>34 O'Daly, Olimpia Valcareara, Province of Barcelona.—Magnetic iron. 100</p> <p>35 Anglada &amp; Co., Pontons, Province of Barcelona.—Carbonate of zinc. 100</p> <p>36 Provincial Commission, Atapuerca, Province of Burgos.—Stalactites. 100</p> <p>37 Richard &amp; Granducontangne, Riocavado, Province of Burgos.—Hematites. 100</p> <p>37<sup>a</sup> Richard &amp; Granducontangne, Huerto-abajo, Province of Burgos.—Hematites. 100</p> <p>37<sup>b</sup> Richard &amp; Granducontangne, Monterrubio de la Sierra, Province of Burgos.—Hematites. 100</p> <p>38 Gutierrez, Julian, Olmos de Atapuerca, Province of Burgos.—Yellow and red ochre. 100</p> <p>39 Oría, Eugenio, Pancorbo, Province of Burgos.—Oxide of iron. 100</p> <p>40 Corporation of Pineda.—Micaceous iron. 100</p> <p>41 Muñoz Bello, Francisco, Cáceres.—Phosphate of lime. 100</p> <p>42 Gonzales, Diego Bibiano, Cáceres.—Calcareous phosphates. 100</p> <p>43 Rocandio, Jorge, &amp; Sbarby, Manuel, Zarza y Ciclavín, Province of Cáceres.—Calcareous phosphate. 100</p> |
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For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 27-45.

## Minerals, Ores.

- 44 Sande Olivares, Gerónimo de, Garro-  
billas de Alconetar, Province of Cáceres,  
—Copper ore. 100
- 45 Miro Cerdá, various towns of the  
Province of Castellon.—Ores. 100
- 46 Provincial Board of Agriculture,  
Province of Castellon.—Galena and cala-  
mine. 100
- 47 Caminero, José, Ciudad-Real.—  
Ores. 100
- 48 Piquet, Alfonso Emilio, Horcajo,  
Province of Ciudad-Real.—Ores. 100
- 49 Mines of Almaden, Almaden, Ciud-  
dad-Real.—Cinnabar ores and rocks. 100
- 50 Ducloux, Francisco Javier, Province  
of Barcelona.—Ores. 100
- 51 Gomez Ruiz, widow & sons of  
Gabriel, San Julian del Llot, Province of  
Gerona.—Lead ore. 100
- 52 Hisern, Joaquin, Caratúnas, Prov-  
ince of Granada.—Hematite iron. 100
- 53 Vasquez, Diego, Pitres, Province of  
Granada.—Quicksilver ore. 100
- 54 Corps of Mining Engineers, Hien-  
delaencina, Province of Guadalajara.—  
Brittle silver, blue copper, and mala-  
chites. 100
- 55 Gracian, Andrés, Huelva.—Sulphur  
of argentiferous antimony. 100
- 56 Ibarra, José Maria de, Huelva.—Col-  
lection of cuprous-iron pyrites and pro-  
ducts. 100
- 57 Vasquez y Lopez, M., Zalamea la  
Real, Province of Huelva.—Peroxide of  
manganese. 100
- 58 Rieken y Gerdes, George, Mina Bron-  
teriza, Huelva.—Sulphur. 100
- 59 Solo, Emilio de, Alosno, Province of  
Huelva.—Peroxide of manganese. 100
- 60 Diaz y Gomez de Cadiz, Eduardo,  
Valverde del Camino, Province of Huel-  
va.—Manganese ore. 100
- 61 Bull & West, Diego, Valverde del  
Camino, province of Huelva.—Cuprous  
pyrites. 100
- 62 Tharsis Sulphur & Copper Co.  
(limited), Alosno, Province of Huelva.—  
Ores and slags. 100
- 63 Rio Tinto Co. (limited), Province of  
Huelva.—Ores. 100
- 64 La Buena Fé, Society, Linares, Prov-  
ince of Jaen.—Laminated galena, etc. 100
- 65 La Familia Society, Linares, Prov-  
ince of Jaen.—Laminated galena and ga-  
lena in dross. 100
- 66 La Inocencia Mining Society, Guar-  
roman, Province of Jaen.—Laminated  
galena and galena in dross. 100
- 67 Stolberg & Westfalia, Anonymous  
Society, Linares, Province of Jaen.—  
Laminated galena and galena in dross. 100
- 68 English, Heirs of Juan Carlos, Li-  
nares, Province of Jaen.—Laminated and  
ground galena and galena in dross. 100
- 69 Accino y Vazquez de Araujo, En-  
rique, Linares, Province of Jaen.—Lami-  
nated galena. 100
- 70 Sopwith, Tomás, Linares, Prov-  
ince of Jaen.—Laminated galena. 100
- 71 Bonaplata, Eduardo, Bailén, Prov-  
ince of Jaen.—Galena. 100
- 72 Figueroa, Ignacio, Linares, Province  
of Jaen.—Galena. 100
- 73 Amado Salazar, Enrique, Bailén,  
Province of Jaen.—Galena. 100
- 74 Lohnstein, Emilio, Linares, Prov-  
ince of Jaen.—Galena. 100
- 75 Arboledas, Martin, Linares, Prov-  
ince of Jaen.—Sulphate of lead. 100
- 76 Villanova, José Genaro, Linares,  
Province of Jaen.—Earth from a lead  
mine, and potter's antimony. 100
- 77 Polo Leoncio, Villafeliz, Province of  
Leon.—Iron ore. 100
- 78 Alonso, Casimiro, Leon.—Oxidized  
iron ore. 100
- 79 Bertrand, Casimiro, Alina, Lérida.—  
Ocelleres, native iron. 100
- 80 Reynante y Cancio, Manuel, Riva-  
deo, Lugo.—Ores. 100
- 81 Corps of Mining Engineers, Madrid.  
—Ores. 100
- 82 Naranjo y Garza, Felipe, from vari-  
ous towns of the Province of Madrid.—  
Ores. 100
- 83 Mining Engineers, Málaga.—Mala-  
chite copper ore. 100
- 83a Mining Engineers, Marbella, Prov-  
ince of Málaga.—Magnetic iron. 100
- 83b Mining Engineers, Estepona, Prov-  
ince of Málaga.—Magnetic iron. 100
- 83c Mining Engineers, Mijas, Province  
of Málaga.—Hydrated iron, galena, and  
magnetic iron. 100
- 83d Mining Engineers, Istan, Province  
of Málaga.—Magnetic iron. 100
- 83e Mining Engineers, Carratraca,  
Province of Málaga.—Hematites. 100
- 83f Mining Engineers, Antequera,  
Province of Málaga.—Oligistic iron. 100
- 83g Mining Engineers, Coin, Province  
of Málaga.—Hematites. 100
- 83h Mining Engineers, Benahavis,  
Province of Málaga.—Sulpho-arsenic  
nickel and sulphurous nickel. 100
- 83i Mining Engineers, Benalmadena,  
Province of Málaga.—Hydrated iron. 100
- 83j Mining Engineers, Alora, Province  
of Málaga.—Nickel. 100
- 83k Mining Engineers, Almogía, Prov-  
ince of Málaga.—Malachites and pyrites  
of copper. 100
- 83l Mining Engineers, Alhaurin el  
Grande, Province of Málaga.—Galena and  
carbonate of lead. 100
- 83m Mining Engineers, Colmenar, Prov-  
ince of Málaga.—Galena and pyrites of  
copper. 100
- 83n Mining Engineers, Nerja, Province  
of Málaga.—Galena. 100
- 83o Mining Engineers, Archidona,  
Province of Málaga.—Oligistic iron. 100
- 84 Blandin y Carrese, Manuel, Vera,  
Province of Navarra.—Iron ores. 100
- 85 Macia & Co., Demétrio, Penonta,  
Province of Orense.—Tin ore. 100

Minerals, Ores, Stone.

- 86 Vila, Francisco, Pentes, Province of Orense.—Tin ore. 100
- 87 Mining District of Oviedo, various towns of the Province of Oviedo.—Ores. 100
- 88 Acebal y Menendez, Benito, Carreño, Province of Oviedo.—Iron ore. 100
- 89 Uria Pinilla, Navia de Luarca, Province of Oviedo.—Iron ores. 100
- 90 National Factory of Trubia, Trubia, Province of Oviedo.—Iron ores. 100
- 91 Diestroy Lastra, Antonio del, Mier, Province of Oviedo.—Ores. 100
- 92 Somoza Piñeiro, Ramon, Merza, Province of Pontevedra.—Magnetic iron. 100
- 93 Mining Society, Salamanca.—Tin ore. 100
- 94 Neeschouerrer Bellesfrod & Co., from various towns and provinces.—Ores. 100
- 95 Mining & Foundry Co. of Santander.—Ores. 100
- 96 Buen Deseo Mining Society, Peñalcázar, Province of Soria.—Argentiferous lead ore. 100
- 97 Perez, Bernardo, Peñalcázar, Province of Soria.—Argentiferous lead ore. 100
- 98 Director of the Company of Mines & the Manufactory del Pedroso, Cazalla de la Sierra, Province of Seville.—Iron ores. 100
- 99 Gomez, José María, Vimbodi, Province of Tarragona.—Pyrites and barytes in powder. 100
- 100 Monner, Francisco, Las Borjas, Province of Tarragona.—Oligistic iron. 100
- 101 Britó & Sierra, Camañas, Province of Teruel.—Crystallized manganese ore, pyrolusite. 100
- 102 Maorad, Benito, Camañas, Province of Teruel.—Manganese. 100
- 103 Valdemoro, Juan Francisco, Teruel.—Oxide of iron. 100
- 104 Belles, James, Albarracin, Province of Teruel.—Oxide of iron. 100
- 105 Perez, Francisco, Linares, Province of Teruel.—Calamine. 100
- 106 Diego, Vicente de, Bilbao, Province of Vizcaya.—Iron ores. 100
- 107 Bourson, Miguel, Somorrostro, Province of Vizcaya.—Iron ore. 100
- 108 Bilbao Iron Ore Company (limited), Galdames, Province of Vizcaya.—Iron ore. 100
- 109 Zabalo, Andrés, Illueca, Zaragoza.—Oligistic iron. 100
- 109a Mouner, Francisco, Reus, Province of Tarragona.—Ores. 100
- 110 Rueda, Manuel, Mesones, Province of Zaragoza.—Oligistic iron. 100
- 111 Bolven y Senty, Adolfo, Maestu, Province of Alava.—Natural rock asphaltum, refined bitumen, pure and dry asphaltum. 101
- 112 Asphaltum Company of Maestu, Vitoria.—Asphaltum. 101
- 113 Mining Union, Calaf, Province of Barcelona.—Lignite. 101
- 114 La Perla Bergadana Mining Society, Pont de Raventí, Province of Barcelona.—Mineral coal. 110
- 115 Gispert y Pujals, Manuel, Barcelona.—Mineral coal. 101
- 116 Orta, Eugenio, Brieua de Juarros, Province of Burgos.—Dry pit-coal. 101
- 117 Juarreaña Society, San Adrian de Juarros, Province of Burgos.—Dry pit-coal. 101
- 118 Miró y Cerdá, C., from various towns of the Province of Castellón.—Coal. 101
- 119 Metallurgical Coal-pit Company of Belmez, Peñarroya, Province of Córdoba.—Pit-coal, and coke. 101
- 120 El Veterano Mineral Society, Surroca, Province of Gerona.—Pit-coal and coke; rocks, illustrating the geological composition of the coal districts of Surroca and Ogassa. 101
- 121 Board of Agriculture, Industry, & Commerce, Oviedo.—Coke and mineral coal. 101
- 121a Board of Agriculture, Industry, & Commerce, Mieres, Province of Oviedo.—Coal block, weighing 30 cwt. 101
- 122 Coal-pit Society of Muñon, Muñon, Pola de Lena, Province of Oviedo.—Mineral coal. 101
- 123 National Factory of Trubia, Trubia, Province of Oviedo.—Mineral coal and coke. 101
- 124 García de los Rios, Eduardo, Mieres, Province of Oviedo.—Pit-coal. 101
- 125 Vigon, Braulio, Carrándi, Province of Oviedo.—Anthracite coal. 101
- 126 Mines of Castilla, Barruelo, Province of Palencia.—Pit-coal and coke. 101
- 127 Fernandez Castañeda, Telesforo, Reinosa, Province of Santander.—Lignite. 101
- 128 Pereire, Isaac, Villanueva del Rio, Province of Seville.—Coal. 101
- 129 Corps of Mining Engineers, Soria.—Impregnated asphaltum. 101
- 130 Peguero, Andrés, Utrillas, Province of Teruel.—Coal. 101
- 131 Sierra, Francisco, Utrillas, Province of Teruel.—Coal. 101
- 132 Estéban, Cristóbal, Libros, Province of Teruel.—Brimstone. 101
- 133 Fernandes, Francisco, Havana, Island of Cuba.—Asphaltum. 101
- 134 Blanquer Ronda, Mariano, Callosa de Ensarriá, Province of Alicante.—Black marble. 101
- 135 Serrano, Cardona & Co., Monóvar, Province of Alicante.—Tubing and pillar, with enclosure. 101
- 136 Jovér, Francisco, Almería, Province of Almería.—Construction stones. 101
- 136a Abelló y Boada, Pablo, Sarreal, Province of Tarragona.—Alabaster. 101
- 137 Daza, Francisco, Macael, Province of Almería.—Marble. 101
- 138 Tréll, Miguel del, Berja, Province of Almería.—Marble for construction. 101
- 139 Chief Engineer of Highways, Valdemolinos, Province of Avila.—Granite. 101

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- 140 Estevez, Manuel Benito, Badajoz. —Slates. 10
- 143 Provincial Commission of Villagaliño, Province of Burgos.—Alabaster, marble, calcareous stone, slate, and wheat stones. 102
- 144 Baldirez, Santiago, Villorobe, Province of Burgos.—Slates. 102
- 145 Richard & Granducontagne, Barbadoillo de Herreros, Province of Burgos.—Gravel. 102
- 146 Corporation of Villamartin, Province of Cádiz.—Jasper. 102
- 147 Corporation of Chiclana, Province of Cádiz.—Jasper. 102
- 148 Corporation of Grazales, Province of Cádiz.—Colored marble. 102
- 149 Nuñez, José María, Cádiz.—Collection of marbles and jaspers. 102
- 150 Feo y Hermos, Miguel Alfonso, San Miguel de Abona, Canary Islands.—Flagstone. 102
- 151 Gamez, Angel, Santa Cruz de Tenerife, Canary Islands.—Rock, lava, and volcanic products. 102
- 152 Society of Friends, Las Palmas, Canary Islands.—Jasper. 102
- 153 Provincial Board of Agriculture, Calig, Province of Castellón.—Marble and calcareous stone. 102
- 154 Corporation of Cabra, Province of Córdoba.—Marbles. 102
- 155 Lopez Seoane, Victor, Ferrol, Province of La Coruña.—Stones and marbles. 102
- 156 Corporation of Portilla de la Sierra, Province of Cuenca.—Marbles. 102
- 157 Corporation of La Cierva, Province of Cuenca.—Marble. 102
- 158 Yañiz, Ambrosio, Las Majadas, Province of Cuenca.—Marbles. 102
- 159 Madero, Cirilo, Arcos de la Cantera, Province of Cuenca.—Calcareous stone. 102
- 160 Rubio Perez, Juan, Guejar, Province of Granada.—Serpentine. 102
- 161 Corporation of Fuente Heridos, Province of Huelva.—Marble. 102
- 162 Corporation of Galaroza, Province of Huelva.—Marbles. 102
- 163 Gonzalez Molada, Justo, Alcaudete, Province of Jaén.—Construction materials. 102
- 164 Corporation of Castillo de Locubin, Province of Jaén.—Jasper. 102
- 165 Provincial Institute, Leon.—Marbles and alabasters. 102
- 166 Uleeschouwer, Bellefroid, & Co., Unzanilla, Province of Leon.—Marble formed by calcareous fossils. 102
- 167 Institute of Secondary Instruction of Mondoñedo, Province of Lugo.—Marbles and slates. 102
- 168 Corps of Mining Engineers, Province of Málaga.—Marbles. 102
- 169 Corporation of Mijas, Province of Málaga.—Marbles. 102
- 170 Corps of Mining Engineers, Province of Murcia.—Marble, grit, construction stone, and alabaster. 102
- 171 Corporation of Piloña, Province of Oviedo.—Marbles. 102
- 172 Corporation of Salas, Province of Oviedo.—Marble. 102
- 173 Corporation of Colunga, Province of Oviedo.—Marble. 102
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- 175 Corporation of Linares, Province of Segovia.—Calcareous construction stones. 102
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- 177 Corporation of Aragonese, Province of Segovia.—Stone. 102
- 178 Corporation of Moron, Province of Sevilla.—Jasper. 102
- 179 Corporation of Cantalucia, Province of Soria.—Marbles. 102
- 180 Corporation of Espeja, Province of Soria.—Marbles. 102
- 181 Garcia, Cayetano, Espejon, Province of Soria.—Marbles. 102
- 182 Gomez, José María, Sareal, Province of Tarragona.—Alabaster and marble, in powder. 102
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- 185 Board of Public Works, Villarmentero, Province of Valladolid.—Crystallized gypsum. 102
- 186 Corporation of Ricla, Province of Zaragoza.—Marbles. 102
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- 188 Corporation of Fuentes de Ebro, Province of Zaragoza.—Alabaster. 102
- 189 Boada, Jerónimo, Mataró, Province of Barcelona.—Artificial stone. 102
- 190 Navarro, Antonio, Las Palmas, Canary Islands.—Calcareous stone and powdered lime. 102
- 191 Lledó y Gomez, Cipriano, Cuenca.—White gypsum. 102
- 192 Fernandez, Gervasio, Torrubia de Campo, Province of Cuenca.—Alabasterian gypsum. 102
- 193 Lopez, Simon, Torrubia del Campo, Province of Cuenca.—Powdered alabasterian gypsum. 102
- 194 Corporation of Ayamonte, Province of Huelva.—Lime. 102
- 195 District of Mining Engineers, Province of Málaga.—Gypsum. 102
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- 197 Corporation of Moron, Province of Sevilla.—Gypsum and lime. 102
- 198 Tomás, Antonio, Reus, Province of Tarragona.—Sulphate of barytes and lime. 102
- 199 Cervera, Luis, Montblanch, Province of Tarragona.—Sulphate of hydrated lime. 102
- 200 Barran, Leoncio, Alcalá de Guadaira, Province of Sevilla.—Slack, quicklime, limestone, etc. 102
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- 204 Saavedra Ramírez, Alejo, Somotín, Province of Almería.—Silicate of magnesia. 104
- 205 Daza y Ruiz, Francisco, Somotín, Province of Almería.—Silicate of magnesia. 104
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- 208 Oria, Eugenio, Pancorbo, Province of Burgos.—Bricks. 104
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- 210 Foundry & Delft Factory of Sargadelos, Cervo, Province of Lugo.—Crude materials for the manufacture of delft. 104
- 211 Banante, Juan, Chantada, Province of Lugo.—Argil. 104
- 212 District of Mining Engineers, Marbella, Province of Málaga.—Steatite. 104
- 213 Provincial Board of Agriculture, Industry, & Commerce, Collera, Province of Oviedo.—Spar. 104
- 214 Uria & Pinilla, Navia de Laurca, Province of Oviedo.—Refractory stone. 104
- 215 Factory of Trubia, Trubia, Province of Oviedo.—Argil, silicate, and lime. 104
- 216 Villar Cagide, Joaquín, Santa Maria de Abades, Province of Pontevedra.—Steatites. 104
- 217 Matheu, Antonio, Montblanch, Province of Tarragona.—Spanish white. 104
- 218 Corporation of Pinell, Province of Tarragona.—Refractory earth. 104
- 219 Corps of Mining Engineers, Zaragoza.—Argil. 104
- 220 District Mining Engineers, Igualaja, Province of Málaga.—Graphite. 105
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- 225 Pedro, Carmen de, La Rambla, Province of Teruel.—Jct. 106
- 226 Sierra, Francisco, Utrilla, Province of Teruel.—Jct. 106
- 227 Villalba, Gregorio, Utrilla, Province of Teruel.—Jct. 106
- 228 Sanz, Mariano, Patatrubio, Province of Teruel.—Jct. 106
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- 239 Corporation of Montoro, Province of Córdoba.—Sulphurous water. 107
- 240 Lopez, José María, Lucena, Province of Córdoba.—Mineral water. 107
- 241 Marín Manuel, Villaharta, Province of Córdoba.—Mineral water. 107
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- 243 Medinaceli, Duke of, Gerona.—Ferruginous and sulphurous water. 107
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- 246 Darnius, Count of, Gerona.—Ferruginous and sulphurous water. 107
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- 248 Gutierrez Rodriguez, Cayetano, Mogrovejo, Province of Leon.—Mineral waters. 107
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- 255 Niera Gayoso, Dositeo, Lugo.—Sulphurous waters. 107
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- 258 Corporation of Mollina, Province of Málaga.—Mineral waters. 107
- 259 Corporation of Carratraca, Province of Málaga.—Mineral waters. 107
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

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- 267 Cortines, Augustin de, Puente-nausa, Province of Santander.—Sulphurous waters. 107
- 268 Calderon Revuelta, Francisco, Alceda, Province of Santander.—Mineral sulphurous water. 107
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- 282 District Mining Engineers, Málaga.—Iron slag. 111
- 283 National Factory of Trubia, Oviedo.—Iron, steel, etc. 111
- 284 Uria & Pinilla, Navia of L. area, Province of Oviedo.—Iron ingot. 111
- 286 Director of the Mining & Manufacturing Company del Pedroso, Caralls de la Sierra, Province of Seville.—Iron castings and iron plates. 111
- 287 Belles, James, Albarracin, Province of Teruel.—Forged iron. 111
- 288 Valdemoro, Juan Francisco, Teruel.—Forged iron. 111
- 289 Ibarra & Co., Baracaldo, Province of Vizcaya.—Iron. 111
- 290 Corps of Mining Engineers, Hu-elva.—Copper cement and copper. 111
- 291 Villalobos Bros., Berja, Province of Almería.—Lead. 113
- 292 Mines of Almadén, Province of Ciudad-Real.—Quicksilver ore. 113
- 293 Figueroa, Ignacio, Guarroman, Province of Jaén.—Lead in pigs. 113
- 294 Velasco, Bros, Linares, Province of Jaén.—Lead bars. 113
- 295 Macia & Co., Demetrio, Penouta, Province of Orense.—Tin bar. 113
- 296 Vila Yanez, Francisco, Pentes, Province of Orense.—Tin. 113
- 297 El Porvenir Mining Society, Mieres, Province of Oviedo.—Tin. 113
- 298 Alen, Pedro & Manuel, Santa Maria de Acibeiro, Province of Pontevedra.—Tin. 113
- 299 Vazquez Gullias, Francisco, Bear-riz, Province of Orense.—Oxide of tin. 113
- 300 Rui & Tolon, Barcelona.—White metal. 114

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- 274 Arroyo, Juan, Cervantes, Province of Lugo.—Iron. 111
- 275 Ojea Porras, José, Cervantes, Province of Lugo.—Iron. 111
- 276 Somoza, Juan Manuel, Caurel, Province of Lugo.—Iron. 111
- 277 Lopez, José Maria, Puertomarin, Province of Lugo.—Iron. 111
- 278 Foundry & Delft Factory of Sargadelos, Servo, Province of Lugo.—Cast ingot. 111
- 279 Monriz, Gabriel, Lugo.—Horse bit. 111
- 280 Corral, Francisco, Triacastela, Province of Lugo.—Horse shoes. 111
- 301 Piquet, Alfonso Emilio, Horcajo de los Montes, Province of Ciudad-Real.—Plan of the mines of Horcajo. 120
- 302 Mines of Almadén, Province of Ciudad-Real.—Plans of subterranean works, machines, etc. 120
- 303 Grappin, G., Salorino, Province of Cáceres.—Model of the mine Constancia. 121
- 304 Sabate Brunet, Salvador, Barcelona.—Instruments for the exploration of hard rocks. 122

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# PHILIPPINE ISLANDS.

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## Minerals, Ores, Stone, Metallurgical Products.

### Minerals, Ores, Stones, Mining Products.

- 1 Inspection of Mines, Province of Cebu.—Fossil charcoal and auriferous galena. 100
- 2 Con-ut, Isaac, Province of Cebu.—Sand with fossils, and fossil charcoal. 100
- 3 Mansano, Juan., Province of Albay.—Fossil charcoal. 100
- 4 Perez, Norberto, R.P.Fr., Province of Pangasinan.—Rock argil and volcanic topus. 100
- 5 Provincial Commission of Camarines Norte.—Oxydized magnetite, chromate of lead, auriferous minerals. 100
- 6 Llanos, R.P.Fr. Antonio, Province of Lepanto.—Minerals and products of furnaces. 100
- 7 Veloso, Pascal, Province of Cebu.—Fossil charcoal and auriferous galena. 100
- 8 Anchuelo, Quiterio, Province of Bulacan.—Oligistic iron. 100
- 9 Inspection of Mines, Province of Camarines Norte.—Cupreous sand with native copper. 100

- 10 Inspection of Mines, Province of Bulacan.—Oxydized magnetite. 100
- 11 Commission of the District of Benguet, Province of Benguet.—Auriferous sand. 100
- 12 Inspection of Mines, Province of Camarines Sur.—Fossil charcoal. 100
- 13 Inspection of Mines, Province of Albay.—Fossil charcoal, argil, quartzose vein, jet, and sulphur. 100
- 14 Alonzó, Teodoro, Province of Manila.—Amorphous phosphorus. 100
- 15 Inspection of Mines, Province of Lyte.  
     a Sulphur. 100  
     b Marble. 100
- 16 Municipal Athenæum, Province of Manila.—Marble and jasper. 100

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- 17 Provincial Commission of Masbata.—Gold-dust and grains. 130
- 18 Commission of the District of Lepanto, Province of Lepanto.—Gold-dust and gold. 130

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

## PORTUGAL.

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## Minerals, Ores, Stone.

## Minerals, Ores, Stones, Mining Products.

- 1 Antonio, Martins, Henriques, & Co., Mont Alto.—Antimony ore from Mont Alto. 100
- 2 Cortes Pereira Antimony Mine Exploring Co.—Antimony ore. 100
- 3 Antimony Mining Co. of Corte Pereira.—Antimony ore. 100
- 4 Blanck, Carlos Frederico, Lisbon.—Antimony ore from Herdade da Prata. 100
- 5 Barriga, Antonio F., Portalegre.—Quartz of Valle de Peso. 100
- 8 Caveira Mining Co., Grandola.—Copper ore from the Caveira mine. 100
- 9 Deliguy, Ernest, Lisbon.—Copper ore. 100
- 10 Elliott, George, & Ferreira Castello, José H., Lisbon.—Iron ores from Ares Zambujal and San Bartholomeu mines. 100
- 11 Elliott, George, Alvito.—Iron ores from San Bartholomeu and Zambujal mines. 100
- 12 Feurheerd, F. Detlof, & Cruickshank, William, Braçal.—Lead and zinc ores from Braçal and Malhada mines; copper ore from Chança. 100
- 13 Giron, D. José, Lagoas do Paço.—Manganese ore. 100
- 14 Gomes, Alonso, Mertola.—Manganese ore from the Paraíso, Ferragudo, and Calvo mines. 100
- 15 Malhada Mining Co., Malhada.—Copper ore from Malhada mine. 100
- 16 Monges Iron Co. (limited), Lisbon.—Iron ore from Serra dos Monges. 100
- 17 Moraes, José Gonçalves, Arronches.—Iron, manganese, and argentiferous lead ore. 100
- 18 Mason & Barry, Mertola.—Copper ores from San Domingo. 100
- 19 Oliveira, Joao Correia, Senhora de Castello.—Tin ore. 100
- 20 Oliveira, Bento Rodrigues de, San Pedro du Cova.—Anthracite, sulphuret of antimony, and galena. 100
- 21 Portuguese Copper Mining Co., Évora.—Specimens of ores from Basalho mine. 100
- 22 Portuguese Mining Co., Covellos.—Tin ore. 100
- 23 Perseverança Co., Oporto.—Antimony ore from Valle d'Ache, and tin ore from Logar d'Aborin. 100
- 24 Sequeira, Thomas, & Carneiro d'Andrade, Eduardo, Beja.—Copper ore from Juliana mine. 100
- 25 Schreck, Maximiliano, & Kemp, Mauricio, Oporto.—Antimony ore from Campo Redondo; manganese from Píahal da Cunha. 100
- 26 Serrinha Tin Co. (limited), Oporto.—Tin ore from Serrinho da Casca. 100
- 27 Telhadella Mining Co., Telhadella.—Copper ores. 100
- 28 Tras-os-Montes Mining Co., Bragança.—Tin ore. 100
- 29 Transtágana Mining Co., Lisbon.—Copper ores. 100
- 30 Velho, Agostino Francisco, & others, Villa Real.—Lead ore. 100
- 31 Freixo, Viscount de, Oporto.—Argentiferous lead ore. 100
- 32 Zarzechi, Ladislau, Oporto.—Lead ore from the Pego mine. 100
- 33 Department of Mines, Lisbon.
  - a Manganese, tin, and antimony ores; iron pyrites. 100
  - b Marbles. 100
- 34 Oliveira, Bento Rodrigues d', S. Pedro de Cova.
  - a Lead and antimony ore. 100
  - b Mineral coal. 101
- 35 Industrial Union Co., Póvoa de Pedoride.—Coal. 101
- 35a Cabral, Frederico A. de V. P., Oporto.—Coal from Monte das Cavadinhos. 101
- 36 Direction of the Public Works of Braga.—Building stones, etc. 102
- 37 Barreto, Antonio Tavares, Santarém.—Limestone from the Granja quarry. 102
- 38 Carvalho, Venceslau M. de, Condeixa a Velha.—Samples of marbles from Condeixa quarries. 102
- 39 Brites, Augusto Pereira, Torres Novas.—Building stone. 102
- 40 Direction of the Public Works of Vienna do Castello.—Building materials. 102
- 41 Vallongo Slate & Marble Quarries Co., Oporto.—Slabs and roofing slate. 102
- 43 Governor of the Civil District of Ponte Delgada.—Building materials. 102
- 44 Rato, Antonio Moreira, Lisbon.—Marbles. 102
- 45 Santos, Joaquin Antunes dos, Lisbon.—Samples of marble. 102
- 46 Salles, Joaquim José de, Lisbon.—Marbles. 102

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Stone, Minerals, Metallurgical Products, Engineering.

- 47 Salles, Germano José de, Lisbon.—Marbles. 102
- 48 Bessonni, Viscount de, Cintra.—Marbles. 102
- 49 Ponta Delgada, Committee of.—Building materials. 102
- 50 Direction of the Public Works of Vizeu, Vizeu.—Building materials. 102
- 51 Direction of the Public Works of Oporto, Oporto.—Building materials. 102
- 52 Direction of the Public Works of Aveiro, Aveiro.—Building materials. 102
- 53 Direction of the Public Works of the Mondego river & Figueira bar, Coimbra.—Building materials. 102
- 54 Direction of the Public Works of Coimbra, Coimbra.—Building materials of the district. 102
- 55 Direction of the Public Works of Leiria, Leiria.—Building materials of the district. 102
- 56 Extremoz Marble Quarrying Co., Extremoz.—Marbles. 102
- 57 Rasca Cement Exploring Company, Lisbon.—Hydraulic cement. 103
- 58 Parochial Board of Sabacheira, Sabacheira.—Limestone. 103
- 59 Governor of the Civil District of Portalegre.—Phosphate of lime from Marvão. 103
- 60 Lisbon Dyeing & Cotton Printing Company, Lisbon.—Lime. 103
- 61 Ponta Delgada, Committee of.  
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- 63 Coelho, Francisco, Torres Novas.—Clay. 104
- 64 Manilha, Francisco dos Santos Lopes, Valongo.—Whetstones. 106

- 65 Vidago Mineral Waters Company, Lisbon.—Mineral waters. 10
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- 67 Janson, J. H., & Co., Lisbon.—Soda water. 107
- 68 Freitas, Albino, José, Ega.—Mineral waters. 107
- 70 Fialho & Bro., Lisbon.—Mineral waters. 107
- 71 Committee of Administration, Sulphur baths of Castelo de Vide.—Sulphurous mineral waters. 107

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- 74 Ferreira & Sousa, Oporto.—Gold leaf. 110
- 75 Cardoso, José Pereira, jr., Oporto.  
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- 76 Beirrollas, Manuel Antonio, Gollega.—Horse shoes. 111
- 77 Department of Mines, Lisbon.—Iron from Moncorvo. 111
- 78 Perseverança Company, Oporto.—Tin ingot. 113
- 79 Tras-os-Montes Mining Company, Braganza.—Tin ingot. 113

## Mining Engineering.

- 80 Department of Mines, Lisbon.—Plans of mines. 121
- 81 Mason & Barry, Mertola.—Plans of mines; model of a Roman wheel. 121
- 82 Silva, S. A. P. da, & F. A. Marques de Moura, Aveiro.—Plan of a salt pit, with description of same. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

## TURKEY.

*(South of Nave, Columns 14 to 17.)*

## Minerals, Ores, Stone.

## Minerals, Ores, Stone, Mining Products.

- |    |   |     |
|----|---|-----|
| 1  | Wilkinson, Rizzo, & Co., Koumarliar, Dardanelles.—Sulphur ore, sulphurous copper.       | 100 |
| 2  | Tapa, Daniel, Cian, Dardanelles.—Lead ore.  | 100 |
| 3  | Sarral, Mouradite, Trebizond.—Argentiferous galena.                                     | 100 |
| 4  | Sarral, Lokhia, Trebizond.—Iron pyrites.  | 100 |
| 5  | Schirin Agha, Tirepola, Trebizond.—Copper pyrites.                                      | 100 |
| 6  | Soleiman, Gueugine, Trebizond.—Galena.  | 100 |
| 7  | Omer, Oglou Osman, Lokhia, Trebizond.—Galena.   | 100 |
| 8  | Omer, Effendi, Ordou, Trebizond.—Argentiferous galena.                                  | 100 |
| 9  | Nimetoulah, Trebelau, Trebizond.—Copper ore.  | 100 |
| 10 | Nimetoulah, Kurelli, Trebizond.—Copper pyrites.   | 100 |
| 11 | Pappazaki, Nicola, Sfakia, Crète.—Lignite.  | 100 |
| 12 | Nimetoulah, Mouradite, Trebizond.—Argentiferous galena.                                 | 100 |
| 13 | Moustapha, Effendi, Cherkech, Castamouni.—Chalk.  | 100 |
| 14 | Gonssan, Government of, Adana.—Iron pyrites.  | 100 |
| 15 | Multesim Oulah, Tireboli, Trebizond.—Ferruginous sediment.                              | 100 |
| 16 | Multesim, Abdoulah, Tirebole, Trebizond.—Argentiferous galena, copper pyrites.          | 100 |
| 17 | Mandent, Diarbekir.—Silver ore.   | 100 |
| 18 | Multesim, Tireboli, Trebizond.—Cupreous pyrites.  | 100 |
| 19 | Ligory, Effendi, Stankeney, Dardanelles.<br>a Manganese, iron ore, and sulphur ore.     | 100 |
|    | b Emery.  | 106 |
| 20 | Kara-Hissar, Government of, Sivas.—Argentiferous galena, aluminous earth.               | 100 |
| 21 | All, Hadji Diarbekir.—Brimstone of the desert.  | 100 |
| 22 | Moustapha, Hadji, Nich, Danube.—Iron stone.   | 100 |
| 23 | Adrianople, Government of.<br>a Powdered mica.  | 100 |
|    | b Coal.   | 101 |
|    | c Sand for mouldings.   | 104 |
| 24 | Debré, Government of, Monastir.—Sulphate of chalk.                                      | 100 |
| 25 | Aydin, Government of.—Argentiferous galena, lignite, iron ore.                          | 100 |
| 26 | Adana, Government of.—Sulphate of chalk and galena.                                     | 100 |
| 27 | Gumuch Hané, Government of, Trebizond.—Argentiferous and cupreous galena.               | 100 |
| 28 | Ichkodra, Government of, Monastir.—Sulphur ore.   | 100 |
| 29 | Ichkloura, Government of, Monastir.—Brimstone, arsenical ore, and sulphate of copper.   | 100 |
| 30 | Havret, Government of, Salonica.—Argentiferous galena.                                  | 100 |
| 31 | Topous, Oglou, Imbros, Dardanelles.<br>a Lead ore.                                      | 100 |
|    | b Coal.   | 101 |
| 32 | Koniah, Government of.—Brimstone.   | 100 |
| 33 | Micheré, Government of, Yanina.—Lignite.  | 100 |
| 34 | Medina, Government of, Hidjas.—Rock crystals.   | 100 |
| 35 | Maghlé, Government of, Aydin.—Argentiferous galena, iron and chrome ores.               | 100 |
| 36 | Militinous, Government of, Samos.<br>a Talc.  | 100 |
|    | b Yellow earth, argil.  | 104 |
| 37 | Lapeaki, Government of, Dardanelles.—Brimstone.   | 100 |
| 38 | Karssendi, Government of, Adana.<br>a Copper and silver ore, lignite and galena.        | 100 |
|    | b Grit sandstone.   | 102 |
| 39 | Tdomane, Government of, Yanina.—Galena.   | 100 |
| 40 | Trebizond, Government of.—Galena.   | 100 |
| 41 | Ushup, Government of, Monastir.—Aluminous earth.  | 100 |
| 42 | Samos, Government of.<br>a Galena.  | 100 |
|    | b White and colored marble.   | 102 |
|    | c Argil.  | 104 |
|    | d Emery.  | 106 |
| 43 | Suleimaneeyah, Government of, Bagdad.<br>a Melted brimstone, cut rock crystal.          | 100 |
|    | b Argil.  | 104 |
| 44 | Smyrna, Government of, Aydin.—<br>a Lignite, argentiferous galena, iron ore, manganese. | 100 |
|    | b Emery, grindstones.   | 106 |
| 45 | Syros, Government of, Salonica.—Lignite.  | 100 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43

## Minerals, Ores, Stone, Metallurgical Products.

46 Souké, Government of, Aydin.	
a Iron ore.	100
b Red sandstone.	102
c Tripoli.	104
d Emery.	106
47 Saroukhan, Government of, Aydin.	
a Chrome ore.	100
b Mineral water.	107
48 Samakon Factory, Sophia, Danube.	
—Iron ore.	100
49 Ergain, Diarbekir.—Copper ore.	100
50 Donel Aghop, Esiné, Dardanelles.—	
Manganese.	100
51 Dardalah, Mouradile, Trebizond.—	
Copper pyrites.	100
52 Pappazaki, Dimitri, Sfakia, Crète.—	
Argillous talc.	100
53 Abdi Bey, Myteline, Dardanelles.—	
Chrome.	100
54 Abdoullah Eey, Myteline, Dardanel-	
les.	
a Antimony.	100
b Emery.	106
55 Asit Anelé, Olevek, Trebizond.—	
Manganese.	100
56 Ulmazrati, Ahmed, Tripoli, Tripoli.	
—Crude brimstone.	100
57 Administration of the Mines, Con-	
stantinople.—Collection of ores.	100
58 Mehemed Agha, Aleppo.—Coal.	101
59 Bridore, Government of, Bosnia.—	
Lignite.	101
60 Djesiré, Diarbekir.—Coal.	101
61 Kratova, Government of, Monastir.—	
Coal.	101
62 Mosul, Government of, Bagdad.—	
Coal.	101
63 Nich, Government of, Danube.—	
Coal.	101
64 Panaloko, Government of, Bosnia.—	
Coal.	101
65 Ychtip Government of, Monastir.—	
Coal.	101
66 Ereili, Castamouni, Castamouni.—	
Lignite.	101
67 Serkiz, Aleppo.—Red marble.	102
68 Razoula, Aleppo.—Yellow marble,	
calcareous stone.	102
69 Koyondja, Government of, Bosnia.—	
Marble.	102
70 Nenedés, Government of, Samos.—	
White marble.	102
71 Nicolaki, Jovan Oglou, Dardanelles,	
Dardanelles.—Cement.	103
72 Sfakia, Government of, Crète.—	
Crude lime.	103
73 Naoum Cassam, Aleppo.—Argil.	104

74 Baktiar Bez., Panaloko, Bosnia.—	
Pipe-clay.	104
75 Ali Effendi, Angora.—Argil.	104
76 Myteline, Government of, Darda-	
nelles.—Graphite.	105
77 Osman Bin Mohamed, Bridore,	
Bosnia.—Emery.	106
78 Ali, Hadji, Teké, Koniah.—Emery.	106
79 Yildiz-Ki, Government of, Sivas.	
a Emery.	106
b Mineral water.	107
80 Bendissa, Government of, Aleppo.	
—Hot mineral water.	107
81 Gearichvous, Government of, Alep-	
po.—Hot mineral water.	107
82 Erseindjan, Government of, Erze-	
roum.—Mineral water.	107
83 Marach, Government of, Aleppo.—	
Mineral waters.	107
84 Rikanié, Government of, Aleppo.—	
Mineral water.	107
86 Zeitoun, Government of, Aleppo.—	
Hot mineral water.	107
87 Volonia, Government of, Yanina.—	
Mineral water.	107
88 Central Drug Store, della Sudda's,	
Inigueul, Ichitli.—Mineral water.	107
89 Bin Cachi Mehemed, Aleppo.—	
Mineral water.	107

## Metallurgical Products.

90 Giovan, Siros, Salonica.—Gold-	
dust.	110
91 Mehemed a, Marach, Aleppo.—	
Horse shoes and nails.	111
92 Moustapha, Hadji, Aleppo.—Iron.	111
93 Ak-Hissar, Government of, Bosnia.	
—Iron.	111
94 Kerschove, Government of, Bosnia.	
—Iron.	111
95 Varach, Government of, Bosnia.—	
Iron.	111
96 Karassendi, Government of, Adana.	
—Crude iron.	111
97 Kara-Hissar, Government of,	
Sivas.	
a Iron.	111
b Lead slag.	113
98 Samakon Factory, Sophia, Danube.	
—Iron.	111
99 Abass Agha, Kuspuh, Monastir.—	
Horse shoes.	111
100 Ligory Effendi, Stankeny, Darda-	
nelles.—Copper.	112
101 Samos, Government of.—Zinc.	113

\* or classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## RUSSIA.

*(South of Nave, Columns 19 to 23.)*

## Minerals, Ores, Stone, Metallurgical Products.

## Minerals, Ores, Stones, Mining Products.

- 1 Yoogoff Iron Works, Government of Perm.—Copper ores. 100
- 2 Pootiloff Iron Works Company, St. Petersburg.—Iron ores. 100
- 3 Administration of the Goroblagodati Mining District, Government of Perm.—Magnetic and other iron ores. 100
- 4 Administration of the Mining Districts in Western Poland. 100
  - a Iron ore, calamine, and lead blende. 100
  - b Coal. 102
  - c Refractory clay. 104
- 5 Administration of the Olonetz Mining District.—Lake iron ore. 100
- 6 Rogosloosky Crown Copper Works, Government of Perm.—Copper ores. 100
- 7 Demidoff, Paul, Prince of San Donato, Nigni Tagil, Ural Mountains, Government of Perm.—Iron and copper ores. 100
- 8 Gessrick & Woerfel, St. Petersburg.—Siberian minerals and hard stones. 100
- 9 Kniaze Michailoffi Crown Steel Works, Government of Orenburg.—Magnetic iron ore. 100
- 10 Mining School, St. Petersburg.—Minerals and paleontological collection. 100
- 11 Bashkoff, Basil, Bogoyavlensk, & Verkhotoorji, Government of Oufa.—Copper ores. 100
- 12 Russian Rail Manufacturing Company, Government of Kiazan, District of Trensck.—Iron ore. 100
- 13 Saltkinsky Crown Iron Works, Government of Orenburg.—Brown and sparry iron ores. 100
- 14 Sidoroff, Michael, St. Petersburg.
  - a Iron ore. (Northern limits of Russia.) 100
  - b Siberian graphite from the district of Toorookhansk. 105
- 15 Yakovleff, John, Alexandria, Government of Kherson.
  - a Iron ore. 100
  - b Graphite. 105
- 16 Russian Navigation & Trade Company, Odessa.—Specimens of anthracite coal. 101
- 18 Majervsky, T., & Stochelsky. M., Government of Pietrkoff, district of Bendzin.—Coal. 101
- 19 Sidoroff, Michael, St. Petersburg.—Bituminous coal, from underground fire burning since 1700. 101

- 20 Zievers, B. Wesenberg, Government of Est-land.—Portland cement. 103
- 21 Schmidt, C., Riga.—Cement. 103
- 22 Sytenko, John, Moscow.—Limestone and plaster. 103
- 23 Lanin, Nicolas, Moscow.—Mineral water. 107

## Metallurgical Products.

- 27 Mining Department, St. Petersburg.—Native platinum, osmiridium (purified), and platinum. 110
- 28 Miasky Government Gold Mines, Government of Orenburg.—Gold-bearing sands; illustration of gold washing machines. 110
- 29 Votkinsk Crown Iron Works, Government of Perm.—Iron (in bars), and cast steel. 111
- 30 Pootiloff Iron Works Company, St. Petersburg.—Cast and wrought iron, steel, twisted rail. 111
- 31 Gun Foundry, Perm.—Cast and wrought iron; steel sections of cast steel guns. 111
- 32 Kama Armor Plate Works, Government of Perm.—Armor plate 111
- 33 Administration of the Goroblagodati Mining District, Government of Perm.—Cast iron projectile. 111
- 34 Administration of the Olonetz Mining Districts.—Cast and wrought iron; section of cast iron guns. 111
- 35 Demidoff, Paul, Prince of San Donato, Nigni Tagil, Ural Mountains, Government of Perm.
  - a Iron; pig bars, ingots, rails, sheets, slags, and flakes. 111
  - b Copper ingots, bars, sheets; illustrations of style of working. 112
- 36 Russian Rail Manufacturing Company, Government of Kiazan, District of Trensck.—Cast iron and iron wire. 111
- 37 Satkinsky Crown Iron Works, Government of Orenburg.—Cast iron. 111
- 38 Admiralty Tyora Works, near St. Petersburg.—Boiler plates. 111
- 39 Yoogoo Copper Works, Government of Perm.—Copper (in bars and ingots), and products of working. 112
- 40 Pashroff, Basil, Bogoyavlensk & Vennihotoorji, Copper Works, Government of Oufa.—Copper ingots, bars, rolled wire, and spangles; illustrations of methods of working. 112

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 27-45.



## Metallurgical Products, Mining Engineering.

42 Ragozlovsky, Crown Copper Works, Government of Perm.—Illustrations of productions of copper. 112

43 Rastergaëff, Gregory, St. Petersburg.—Tinned iron sheets. 114

## Mining Engineering.

44 Administration of Mines in Finland.—Helsingfors' editions and reports on local mine engineering and geology. 120

45 Scientific Committee of the Mining Department, St. Petersburg.—Special editions and periodicals on mine engineering. 120

46 Demidoff, Paul, Prince of San Donati, Nizni Tagil, District of Ural Mountains, Government of Perm.—Maps, plans, and views of this mining district; illustrations of gold washing process. 120

47 Babin, Victor, & Lepooshinsky, Moscow.—Illustrations of boring process, artesian well, and apparatus. 120

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 27-45.

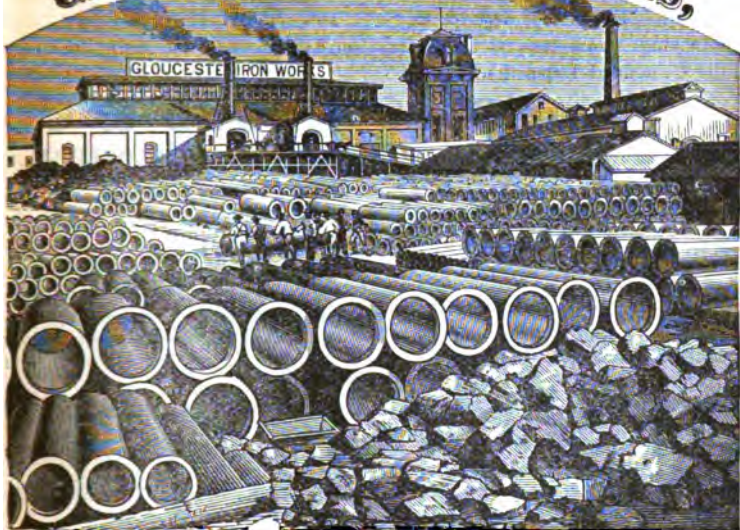


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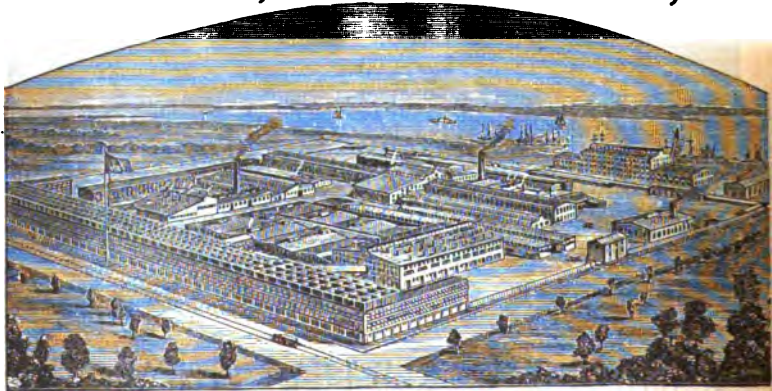
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- a Baking powder. 200
- b Flavoring extracts, celery salt 203
- 2a Ohio River Salt Co., Pomeroy, O.—Salt. V 63. 200
- 3 Hance Bros. & White, Philadelphia, Pa.—Solid and fluid extracts, sugar-coated pills. P 43. 200
- 3a Procter, Wm., jr., & Co., Philadelphia, Pa.—Saccharated pepsin. P 48. 200
- 4 Fries, Alex., & Bros., New York, N. Y.—P 48. 200
- a Chemicals, coloring, etc. 200
- b Artificial fruit and liquor essences, flavors for cigars. 203
- 5 Gordon, W. J. M., Cincinnati, O.—Chemicals, glycerine, sugar-coated pills, podophyllin, hydrastine. P 47. 200
- 6 Rosengarten & Sons, Philadelphia, Pa.—Sulphates of quinine and morphine, and other chemicals for use in medicine and the arts. P 41. 200
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- 8b Campbell, Sam'l, Philadelphia, Pa.—P 47. 200
- a Medicinal fluid extracts. 200
- b Perfumery and toilet articles. 203
- 9 Williamson, D. D., New York, N. Y.—Bisulphite of lime, finings, beer coloring, cleansing powders, tannate of soda, etc. P 49. 200
- 9a Kreitzer, M. C., Philadelphia, Pa.—Medicines, perfumery, etc., in a marble show case. The marble is from a new quarry just opening in Lebanon Valley, Pa. T 43. 200
- 9b Scheffer, E., Louisville, Ky.—Preparations of pepsin. P 48. 200
- 10 Keasbey & Mattison, Philadelphia, Pa.—Granular effervescent preparations, gelatine-coated pills, pharmaceutical specialties. P 43. 200
- 10a Hance, R. A., Philadelphia, Pa.—Fluid extracts. T 43. 200
- 11 Twining & Schiedt, Philadelphia, Pa.—Fluid and solid extracts, sugar-coated pills, elixirs, concentrated preparations, chemicals, syrups, tinctures, powdered drugs. T 41. 200
- 11a Shoemaker, Robert, & Co., Philadelphia, Pa.—Fluid extracts; ground, crushed, and powdered drugs and spices. P 43. 200
- 12 Powers & Weightman, Philadelphia, Pa.—Sulphate of quinia, salts of cinchona barks, sulphate of morphia; chemicals, medicinal, photographic, and for the arts. P 41. 200
- 12a Morrison, Arthur B., Portland, Me.—Gold and silver solution for electrotyping without a battery; restorative for cleaning jewelry. T 57. 200
- 13 Harrison Brothers & Co., Philadelphia, Pa.—P 41. 200
- a Chemicals, alum, sugars of lead, acetates of lime; sulphuric, nitric, muriatic, acetic, and pyroligneous acids. 200
- b White lead, dry and in oil; colors for painters, lithographers, and calico printing. 202
- 13a Central Ohio Salt Co., Columbus, O.—Salt from Athens county. V 63. 200
- 14 Doerr & Sloan, Philadelphia, Pa.—Lacto-phosphate of lime, iron, and cod liver oil. T 40. 200
- 15 Mellor & Rittenhouse, Philadelphia, Pa.—Licorice and pharmaceutical extracts; glycerine composition for printers' rollers. P 41. 200
- 16 Stearns, Frederick, Detroit, Mich.—Pharmaceutical products peculiar to United States, representing his catalogue, number 75, 132 pages, 168 classes, and 10,000 items. P 41. 200
- 17 Duntton, Jacob, & Co., Philadelphia, Pa.—Pills. Compressed lenticular non-excipient porous pills, made from dried powders, by pressure, without admixture; are as soluble after ten years as when first made, and much more readily dissolved than any freshly-made excipient pill. Process and machinery patented. T 40. 200
- 18 Simes, Wm. F., & Son, Philadelphia, Pa.—Camphor, sublimed and compressed into convenient blocks of 1 ounce and 4 ounces; is very durable, strong in natural oil, and perfectly pure. Patented. P 41. 200
- 19 Tacony Chemical Works, Philadelphia, Pa.—Acids, chemical salts, etc. T 42. 200

## Chemicals, Pharmaceutical Preparations.

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- 21 Mockridge, E., & Co., Philadelphia, Pa.—Azumca. T 47. 200
- 22 Bullock & Crenshaw, Philadelphia, Pa.—Sugar-coated pills; United States Pharmacopœia and recipes of eminent physicians, accurately compounded, readily soluble, and strictly reliable in every particular. P 41. 200
- 23 Pennsylvania Salt Manufacturing Co., Philadelphia, Pa.—Kryolite, alum, lye, sodas, acids, chlo. calcium, and alumina. T 42. 200
- 24 Savage, Keyser, & Stoveil, Philadelphia, Pa.—Acids and salts. T 44. 200
- 25 Philadelphia Quartz Co., 9 North Front street, Philadelphia, Pa.—Silicate of soda, in its various forms, specially adapted to the different uses. T 45. 200
- 26 Coyne, Geo. S., Philadelphia, Pa.—Manufacturer and importer of dyewood liquor extracts, acids, dyestuffs, and chemicals generally. (Stores, 104 and 127 Church street, Philadelphia, Pa.; Chester Chemical Works, Delaware county, Pa.) T 44. 200  
 a Acids and chemicals. 200  
 b Dyestuffs. 202
- 28 Condit, Hauson, & Co., Newark, N. J.—Metallic salts, electro-plating materials; hatters', dyers', jewelers', and manufacturers' chemicals. P 49. 200
- 29 Baker, H. J., & Bro., New York, N. Y.—Refined saltpetre, borax and camphor; epsom salts, castor oil. T 49. 200
- 30 Lewis, John T., & Bros., Philadelphia, Pa.—T 42. 200  
 a Acids. 200  
 b White and red lead; litharge, orange mineral; paints, colors, and oils. 200
- 31 Silliman Chemical Works, Philadelphia, Pa.—Chemical products, from tar and fine chemicals, known as Fresenius's tests. P 43. 200
- 32 Wyeth, John, & Bro., Philadelphia, Pa.—Pharmaceutical preparations, drugs, and compressed pills. P 41. 200
- 33 Waterloo Yeast Co., New York, N. Y.—Dry hop yeast cakes. T 47. 200
- 34 McKesson & Robbins, 91 Fulton street, New York, N. Y.—Gelatin-coated pills, aromatic elixirs, medicinal syrups; fluid and solid extracts, perfume extracts, essential oils, indigenous crude drugs. P 43. 200
- 35 Benjamin, E. B., New York, N. Y.—Pure chemicals. N 57. 200
- 36 Kurlbaum & Co., Philadelphia, Pa.—Refined camphor and chemical preparations. P 49. 200
- 38 Libe, John C., Philadelphia, Pa.—Baking yeast powder. T 47. 200
- 39 McIlvaine Brothers, Philadelphia, Pa.—Ground and powdered drugs, paints, etc. P 43. 200
- 40 Smith, Hanway, & Co., Baltimore, Md.—Baking powder. T 47. 200
- 42 Chessman, W. H., Boston, Mass.—Pure lime from Missisquoi Lime Co., Highgate Springs, Vt. T 50. 200
- 43 Brown, Frederick, Philadelphia, Pa.—Essence of Jamaica ginger, and other pharmaceutical preparations. P 41. 200
- 44 Hagner Drug Milling Co., Philadelphia, Pa.—Powdering, grinding, flaking, crushing, and other mill work. T 51. 200
- 45 Bower, Henry, Philadelphia, Pa.—Glycerine, stearic and oleic acids; prussiate of potash, sulphate of ammonia. T 43. 200
- 46 Browning & Brothers, Philadelphia, Pa.—T 44. 200  
 a Acetic acid, acetate of lime, lead, alumina and iron, sulph. copper. 202  
 b Naphtha. 202  
 c Dyewoods. 202
- 48 Leidy, Francis D., Philadelphia, Pa.—Soap powder, washing crystals. T 50. 200
- 50 Bean, Lewis U., Philadelphia, Pa.—P 49. 200  
 a Pharmaceutical preparations, drugs, etc. 200  
 b Paints—dry and in oil. 202
- 51 Pfizer, Chas., & Co., New York, N. Y.—Pharmaceutical and chemical products; cream tartar, tartaric acid, refined borax, and camphor. P 49. 200
- 52 Preston & Merrill, Boston, Mass.—P 48. 200  
 a Yeast powder. 200  
 b Sugar of lemons, flavoring extracts. 202
- 53 Meyer, Jas., Jr., & Co., New York, N. Y.—Girondin disinfectant. Inodorous and colorless; does not injure any object or material it may be applied to; destroys and neutralizes almost instantly the most offensive odors, vapors, or gases; arrests putrefaction, prevents contagion, and is infallible as an agent for embalming. P 49. 200
- 55 Billings, Clapp, & Co., Boston, Mass.—Chemicals. Manufacturers of acids, alkalis, ethers, chloroforms, podophyllin, preparations of gold, silver, tin, zinc, lead, iron, bismuth, mercury, and trade chemicals. Price lists and special quotations sent on application. T 45. 200
- 56 Mackeown, Bower, Ellis, & Co., Philadelphia, Pa.—Drugs and chemicals. T 43. 200
- 58 Phillips & Jacobs, Philadelphia, Pa.—Illustration of the recovery of gold and silver from wastes in the industrial arts. T 46. 200
- 59 Dooley & Bro., New York, N. Y.—Baking powder. T 49. 200
- 60 White, Charles T., & Co., No. 54 Maiden Lane, New York.—Pharmaceutical chemicals, quinia, morphia, strychnia, and their salts; iodides, bromides, acids C. P., etc. Medals of merit for appearance and purity, Am. Institute, 1867-1870; Cincinnati, 1870; Cordova (Arg. Repub.), 1870; Vienna, 1873. P 43. 200
- 61 United States Salicylic Acid Works, New York, N. Y.—Salicylic acid and its preparations. P 47. 200
- 62 Gray, Daniel H., New York, N. Y.—Brimstone and flour of sulphur. T 42. 200
- 63 Follett, O. S., New York, N. Y.—White sugar of lead, chloroform, acetic acid, and vinegar. P 47. 200
- 64 King, Wm., Son, & Co., Philadelphia, Pa.—Crude and refined petroleum. T 41. 201

## Oils, Soap, Candles.

- 64a Frazer Lubricator Co., Jersey City, N. J.—Axle grease. T 50. 201
- 65 Pease, F. S., Buffalo, N. Y.—Pease's "Premium Oils." Improved Oils for Railroads, Steamers, and all classes of Machinery and Burning. P 41. 201
- 66 Baker, John C., & Co., Philadelphia, Pa.—Medicinal cod-liver oil, pure, and in combination with other agents. P 43. 201
- 66a Leonard & Ellis, New York, N. Y.—Cylinder oil. T 54. 201
- 67 Eavenson, Jones, & Sons, Philadelphia, Pa.—Laundry soaps. T 43. 201
- 68 Morgan's, Enoch, Sons, New York, N. Y.—Sapolio, for cleaning and polishing; hand sapolio, for toilet. T 48. 201
- 69 Cragin, I. L., & Co., Philadelphia, Pa.—Dobbins' electric soap and materials used in its manufacture. P 47. 201
- 70 Wrigley, Wm., & Co., Philadelphia, Pa.—Mineral scouring soap. T 44. 201
- 71 McKeone, Van Haagen, & Co., Philadelphia, Pa.—Soaps, oils, perfumery, soap stock, candles. T 39. 201
- 72 Conway, Wm., Philadelphia, Pa.—Laundry soaps. T 49. 201
- 73 Marx & Rawolle, New York, N. Y.—T 40. 201  
 a Glycerine. 201  
 b Lacquers and French varnishes, bleached and refined gum shellac, sealing wax. 202
- 74 Gest & Atkinson, Cincinnati, O.—Lard, tallow, grease; lubricating, burning, and paint oils; car candles. T 39. 201
- 75 Loper & Doughten, Philadelphia, Pa.—Naval stores. T 43. 201
- 76 Fallor, Geo. J., Philadelphia, Pa.—Sewing machine oils. T 44. 201
- 77 Dreydoppel, Wm., Philadelphia, Pa.—Borax soap. T 50. 201
- 78 Elkins, Wm. L., Philadelphia, Pa.—Petroleum, lubricating oils, gasoline, and deodorized naphtha. T 49. 201
- 79 Page, Kidder, & Fletcher, New York, N. Y.—Coal tar products and their uses. T 42. 201
- 80 Aladdin Oil Co., Pittsburg, Pa.—Illuminating and lubricating oils, paraffine, etc. T 43. 201
- 81 Robinson Bros. & Co., Boston, Mass.—Toilet soaps, silver soap. P 47. 201
- 82 Williams, J. B., & Co., Glastonbury, Conn.—Soaps. Manufacturers of Genuine Yankee, Barber's Bar, Clipper, Pumice, Bath, Pocket Shaving, Verbena Cream, and other popular shaving and toilet soaps. P 47. 201
- 83 Brown, Robt. B., & Co., St. Louis, Mo.—Castor oil. T 50. 201
- 85 Marvin Brothers & Bartlett, Portsmouth, N. H.—Cod liver oil. T 47. 201
- 86 Kelley, Ezra, New Bedford, Mass.—Watchmakers', mechanics', and sewing machine oils. T 45. 201
- 87 Hartmann, Laist, & Co., Cincinnati, O.—Glycerine. T 50. 201
- 88 Crew, Moore, & Levick, Philadelphia, Pa.—Illuminating and lubricating oils. T 46. 201
- 89 Pratt, Charles & Co., New York, N. Y.—Petroleum and its products, and packages for same. Model of refinery and astral oil works. T 43. 201
- 91 Smith, Chas. K., & Co., Philadelphia, Pa.—Burning and lubricating petroleum oils, miners' and railroad oils. T 40. 201
- 92 Nye, Wm. F., New Bedford, Mass.—Sewing machine, watch, and clock oils. These oils are obtained from the head of the sperm whale, the black fish, and porpoise, and most carefully refined for the purposes mentioned, only during the severest cold of winter. T 49. 201
- 93 Houghton, E. F., & Co., Philadelphia, Pa.—Cosmoline, for medical purposes; cylinder and machinery oils, hydrocarbonated bone black. T 40. 201
- 94 Boyé, M. H., & Lewis, Geo. T., Philadelphia, Pa.—Cottonseed oil, manufactured and refined. T 50. 201
- 95 Harkness, N. W., Philadelphia, Pa.—Refined petroleum, naphtha, residuum; natural lubricating oils, Harkness' wells, W. Va.; filtering apparatus. T 43. 201
- 96 Eastman & Brooke, Philadelphia, Pa.—P 47. 201  
 a Soaps. 201  
 b Washing blue, Russian dressing, and French blacking. 202
- 97 Devos Manufacturing Co., New York, N. Y.—Cans with Devos' faucet nozzle-top, and samples of oil. T 40. 201
- 98 Day & Frick, Philadelphia, Pa.—Laundry soap; polishes for cleaning paint, metal, etc. T 46. 201
- 99 Dodd, A. W., & Co., Gloucester, Mass.—Cod-liver oil. P 47. 201
- 100 Warden & Oxnard, Pittsburg, Pa.—Refined petroleum. T 49. 201
- 101 Oleophine Oil Co., refinery & works, Greenpoint, L. I.; offices, 320 and 322 Broadway, New York, N. Y., and 84 Beaver street, New York, N. Y.—Refined petroleum illuminating oils. Refiners of petroleum; proprietors of the celebrated Oleophine illuminating oils, and manufacturers of the Company's superior patented can. Oils delivered, in barrels and cans, for export and domestic use. T 44. 201
- 102 Munger, John W., Portland, Me.—Detergent compound. P 49. 201
- 103 Eavenson, J., & Sons, Philadelphia, Pa.—Soaps and candles. T 43. 201
- 104 Jewett, John, & Sons, New York, N. Y.—P 47. 201  
 a Linseed oil. 201  
 b White lead. 202
- 105 Rush & Co., Philadelphia, Pa.—Oils. T 41. 201
- 106 West, C., & Sons, Baltimore, Md.—Refined petroleum oil. T 41. 201
- 107 Miller, William P., & Co., New York, N. Y.—Bodeker's lubricants. T 49. 201
- 108 Galena Oil Works (limited), Franklin, Pa.—Lubricating oil. P 46. 201
- 109 Bassett, George A., Washington City, D. C.—Liquid laundry gloss. T 71. 201
- 110 Todd, A. M., Nottawa, Mich.—Natural oil of peppermint. P 47. 201

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-48.

## Oils, Paints, Pigments.

- 111 Cook, Caleb, Provincetown, Mass.—Watch and clock oil. T 30. 201
- 112 Dixon Crucible Co., Jersey City, N. J.—Graphite paint. P 72. 202
- 113a Williston, A. L., Northampton, Mass.—Indelible ink and marking pens. T 46. 202
- 113b Hover, J. E., & Co., Philadelphia, Pa.—Chemical writing fluid; black ink, carmine, violet, and copying inks; mucilage. T 47. 202
- 113c Prunier, Pierre, Philadelphia, Pa.—Indigo extract, indigo carmine, tanning, gallo-tannic acid, archil, greens, etc. P 47. 202
- 114 Wetherill & Bro., Philadelphia, Pa.—White and red lead, litharge, orange mineral. T 44. 202
- 115 Lucas, John, & Co., Philadelphia, Pa.—White lead, white zinc, colors, paints, varnishes, Swiss and imperial French greens, etc. T 44. 202
- 117 Bihn & Co., Bridgeburg, Philadelphia, Pa.—Lampblack. Established 1844. Manufacturers of all grades of lampblack for painters, curriers, printing ink, oil-cloth, rubber, and wall paper manufacturers. (Put up in handsome pasteboard boxes, neatly labeled.) T 40. 202
- 117a Reisinger Manufacturing Co., Harrisburg, Pa.—Chemical writing fluid. P 68. 202
- 119 Kokosing Oil Co., Gambier, O.—Lampblack. V 63. 202
- 120 Felton, Rau, & Sibley, Philadelphia, Pa.—Coach, furniture, and Japan varnishes. T 40. 202
- 120a Rue, Mrs. S., Philadelphia, Pa.—Furniture polish. W 53. 202
- 121 Reynolds, C. T., & Co., New York, N. Y. (Established 1770).—Paints, dry and in oil, fine colors, chemically pure; superfine quick-drying colors for coach and car painting; ready mixed paints for house and villa painting; laundry blueing, in bags, ready for use; artists' materials, embracing prepared canvas for oil painting, Tyrian water-color tablets, drawing papers and materials; crayons, gilders' tools, brushes for art, painters' and decorators' brushes, grainers' special tools, painters' cutlery, wax-flower materials, etc. The whole line of goods exhibited were taken from their regular stock, made for practical use, and not display. P 42. 202
- 121a Brandeis, L., & Co., New York, N. Y.—Bronze powders; gold, silver, and metal leaf. P 59. 202
- 122 Keystone Paint Co., Muncy, Pa.—Filler for coach, car, and safe painting; paint for school-house blackboards. T 40. 202
- 123 Carter, Dinamore, & Co., Boston, Mass.—Writing fluid, inks, and mucilage; Lombard's inks and mucilage. T 47. 202
- 124 Fromherz, Jos., Cincinnati, O.—Inks. T 47. 202
- 125 Heller & Merz, New York, N. Y.—Ultramarine. T 41. 202
- 126 Rosenberg, D., & Sons, New York, N. Y.—Varnishes and baking japans. Manufacturers of coach, railway, cabinet, agricultural implements, and miscellaneous varnishes; baking japans for all uses; bronzing and colored varnishes, of all colors, a specialty. T 44. 202
- 127 Ware, M. J., Philadelphia, Pa.—Ostrich feathers, dyed and scoured. T 47. 202
- 128 Lockwood, Brooks, & Co., Boston, Mass.—Writing inks and mucilage. P 47. 202
- 129 Pecora Paint Company, Philadelphia, Pa.—Paints, stains, fillers, and dryers. T 41. 202
- 130 Davids, Thad., & Co., New York, N. Y.—Writing inks and fluid, mucilage, sealing wax, notarial seals, wafers, etc. T 47. 202
- 132 Reynald, John, 214 George street Philadelphia, Pa.—Black and colored writing inks, copying inks, mucilage, black dye, indelible ink. Inventor of the "Black Writing Ink," invented 1860; instantaneous black, and remains so for ages. Reynald's instantaneous black Japan ink for architecture. Reynald's instantaneous black copying ink, giving three or four copies distinct and perfect; Reynald's purple and greenish fluids at first, afterwards turning very black; Reynald's indelible ink for marking linen, silk, and cotton, with a clean pen or stencil, will not spread—no preparation; fifteen different albumen colors for coloring maps and photographs, all first class. T 47. 202
- 133 Iron Clad Paint Co., Cleveland, O.—Paints manufactured from iron ore, as used in iron smelting furnaces. T 41. 202
- 134 Phillips, C. C., & Co., Philadelphia, Pa.—Varnish and japans. T 41. 202
- 135 Brooklyn White Lead Co., New York, N. Y.—White lead, red lead, litharge. T 41. 202
- 136 Martin, L., & Co., Philadelphia, Pa.—Lampblack. T 41. 202
- 137 Barker, Moore, & Mein, Philadelphia, Pa.—White lead. T 40. 202
- 138 Parsons, John, New York, N. Y.—Glove powder, Dixon's silver powder, carmine and violet inks, pocket mucilage. T 47. 202
- 139 Waggoner, Gifford, & Co., Chicago, Ill.—Mixed paints. T 59. 202
- 140 Thompson, Albert, Bridgewater, Conn.—American sienna paint. T 40. 202
- 141 Sharpless, John M., & Co., Philadelphia, Pa.—Solid and liquid extract logwood. T 46. 202
- 142 Polychroite Veneer Co., Philadelphia, Pa.—Wood fibre composition, for decorating wood and other surfaces. P 57. 202
- 143 Mathers', Geo., Sons, New York, N. Y.—Type and lithographic printing inks. T 47. 202
- 144 Meyers, Simon S., Philadelphia, Pa.—Stove polish, liquid blueing, in ejecting bottles. T 47. 202
- 145 Valentine & Co., New York, N. Y.—Varnishes, etc., for fine coach and car work. T 43. 202
- 146 Milliken, Eugene, Boston, Mass.—Electrocon liquid polish. T 56. 202
- 147 Masury, J. W., & Son, New York, N. Y.—Grained doors, showing graining colors; superfine colors for coach, carriage, and car painting. T 41. 202

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.



## Pigments, Essences, Perfumery.

- 148 Moss, Geo. A., New York, N. Y.—Liquid blueing, powder blue, shoe blacking, ladies' shoe dressing, writing inks, etc. T 47. 202
- 149 Adams White Lead Co., Baltimore, Md.—White lead and products, a new process securing excellence of body, color, softness, uniformity, and durability. T 42. 202
- 150 Smith, Edward, & Co., New York, N. Y.—Coach and car varnishes, and japan driers. T 42. 202
- 152 Moser, Chas., & Co., Cincinnati, O.—Colors, dry and pulp; paints in oil, coach colors, artists' colors. T 42. 202
- 152a Jarboe, J. W., New York, N. Y.—Ship's model and iron slab coated with enamel paint composition. T 54. 202
- 153 Wright, J. K., & Co., Philadelphia, Pa.—Printers' and lithographers' inks and varnishes. T 47. 202
- 154 Continental Manufacturing Co., Philadelphia, Pa.—Inks, writing fluids, machine, artists' colors. T 47. 202
- 155 McCloskey, Bro., & Co., Philadelphia, Pa.—Paints and colors, ground in oil, dry, and in pulp. T 40. 202
- 155a Robinson & Pratt, Philadelphia, Pa.—Printing and lithographic inks and varnishes. T 51. 202
- 156 Erwin, H., & Co., Bethlehem, Pa.—Mineral paint from Lehigh valley. T 40. 202
- 157 Prince's Metallic Paint Co., Parryville, Pa.—Metallic paint and foundry facings. T 50. 202
- 158 Johnson, Chas. Eneu, & Co., Philadelphia, Pa.—Typographic and lithographic black and colored printing inks, varnishes, etc. T 47. 202
- 159 State of Oregon (by A. J. Dufur).—Paints and oils. V 56. 202
- 160 Maynard & Noyes, Boston, Mass.—Writing ink. T 47. 202
- 161 Estes, E. B., & Son, New York, N. Y.—Sign painters' smalts. T 45. 202
- 162 Rowland, Joseph S. C., Philadelphia, Pa.—Indelible, canceling, and copying ink, and writing fluid. T 47. 202
- 163 American Bronze Powder Manufacturing, Brooklyn, N. Y.—Bronze powders. N 50. 202
- 164 Francis & Loutrel, New York, N. Y.—P 74. 202
- a Copyable printing inks. (Patent, April, 1872.) Use any "copying press." 202
- b Composition for inking rollers. Does not harden, shrink, or crack; good for all time and climate. 543
- 165 Foering, Geo. W., Locust Valley, Lehigh county, Pa.—"Saucun sienna." Geologically, and otherwise, a peculiar formation, rich in alumina and peroxide of iron, exhibiting the durability of the best ochres. T 50. 202
- 166 Peirce, I. Newton, Philadelphia, Pa.—Stone surface enamel colors, and samples. T 70. 202
- 167 Smith, Marshall L., Kimberton, Pa.—Siliceous mineral paint. T 70. 202
- 168 Marble, Jerome, & Co., Worcester, Mass.—Patent indigo blue dye. A pure indigo color produced in any shade, perfectly fast, saving in time and expense, stands all indigo tests; process learned in half a day. T 70. 202
- 169 Zinseer, Wm., & Co., New York, N. Y.—Bleached and refined shellac, French alcohol copal varnishes, sealing wax. Shellacs are in quality same as unbleached; refined, give clear, transparent solutions; varnishes, quick drying, hard surface; lacquers of lasting colors. P 47. 202
- 170 Thomson, J. S., New York, N. Y.—Non-erasable and other inks. T 47. 202
- 171 Shaw, Thomas Ogg, Providence, R. I.—Paint made from mineral from Wyoming Territory. T 50. 202
- 172 Johnson, Henry M., New York, N. Y.—Kalsomine and fresco paints. P 47. 202
- 173 Stimson & Babcock, Boston, Mass.—P 47. 202
- a Coach and car varnishes. 202
- b Gum copals. 203
- 174 Tetlow, Henry, & Bro., Philadelphia, Pa.—Perfumery, bouquet and toilet soaps, fine toilet preparations, blanc illusion, etc. P 48. 203
- 175 Hotchkiss, H. G., Lyons, N. Y.—American official essential oils. P 47. 203
- 176 Upham, Sam'l C., Philadelphia, Pa.—Extract, cologne, Florida water. Perfume fragrant and lasting. Two medals awarded. P 47. 203
- 177 Wenck & Co., New York, N. Y.—Perfumes and toilet preparations. P 47. 203
- 178 Wenck & Briesen, New York, N. Y.—Automatic parlor fountain. P 47. 203
- 179 Chawshaw French Toilet Powder Co.—Toilet powder and perfumed soap. T 48. 203
- 180 Sulzberger, David, Philadelphia, Pa.—Fluid extracts, by cold process; cooking extracts, fruit and liquor flavors, fruit ethers. P 48. 203
- 181 Savournin, W. H., Philadelphia, Pa.—Lily whites, rouges, toilet powders, etc. P 47. 203
- 182 Malcom & Stevenson, Philadelphia, Pa.—Fruit flavoring extracts. P 47. 203
- 184 Woodworth, C. B., & Son, Rochester, N. Y.—Perfumery, hair oils, pomades, cosmetics, flavoring extracts. T 47. 203
- 185 Young, Ladd, & Coffin, New York, N. Y.—Perfumes, oil of cologne, California water. T 48. 203
- 186 Chesebrough Manufacturing Co., New York, N. Y.—Vaseline, pomades, cerates, ointments, perfumes, cold cream, etc. P 43. 203
- 187 Lorenz Bros., Toledo, O.—Concentrated perfumes. P 47. 203
- 188 Da Costa, D. R., Philadelphia, Pa.—Tooth wash. P 48. 203
- 189 Tallmadge & Co., New York, N. Y.—Essential oils and fluid extracts. P 48. 203
- 190 Fritsch, Schimmel, & Co., New York, N. Y.—Essential oils and artificial fruit essences. P 47. 203

## Perfumery, Toilet Articles, Explosive Compounds, Pottery.

- 191 Bell, R. W., & Co., Buffalo, N. Y.—Staple and toilet soaps. T 48. 203
- 191<sup>a</sup> Hotchkiss, L. B., Phelps, N. Y.—Peppermint, spearmint, wintergreen, and pansy essential oils. P 47. 203
- 192 Taylor, C. R., & Co., Philadelphia, Pa.—Toilet soaps and perfumery. P 47. 203
- 193 Blair's, H. C. Sons, Philadelphia, Pa.—Toilet articles. T 47. 203
- 194 Colgate & Co., New York, N. Y.—Fancy soaps and perfumery. P 47. 203
- 195 Watson, Richard H., Philadelphia, Pa.—Handkerchief extracts. De Vies's quadruple handkerchief extracts. These celebrated extracts are produced with great skill, from the finest articles known in perfumery, and for delicacy of perfumes, truthfulness to nature, and tenacity, they are particularly recommended; they are guaranteed to be of quadruple strength, and warranted not to turn rancid. Although not old extracts, they have taken favor immediately, and the best proof of their quality is their large and constantly increasing sales. A trial will convince you. P 47. 203
- 196 Hoyt, E. W., & Co., Lowell, Mass.—Cologne. P 47. 203
- 197 Read, Wm. H., Baltimore, Md.—Cologne, tooth wash, perfumeries. P 47. 203
- 198 Worale, Thos., & Co., Philadelphia, Pa.—Toilet and fancy soaps, and toilet powders. P 47. 203
- 199 Wright, R. & O. A., Philadelphia, Pa.—Extracts, cologne, cosmetics, pomades, oils, dentifrices, toilet soaps, etc. P 47. 203
- 200 Wolf Brothers & Keech, Centreville, Mich.—Essential oils. P 47. 203
- 201 Aschenbach & Miller, Philadelphia, Pa.—Flavoring extracts and perfumery. P 47. 203
- 202 Fricke, Arthur, Philadelphia, Pa.—Perfumery. P 47. 203
- 203 Burnett, Jos., & Co., Boston, Mass.—Flavoring extracts, cologne water, and other toilet articles. P 48. 203
- 204 Colton, J. W., Westfield, Mass.—Colton's select flavoring extracts of choicest fruits and spices. They are strictly pure, rich flavors of the fruits, and are great saving in actual cost, to all. In a sale of thousands of gross, not one particle of coloring or adulteration has ever been used. P 43. 203
- 205 Hale & Parshall, Lyons, N. Y.—Essential oils. P 47. 203
- 206 Atwood, Hermon W., New York, N. Y.—Cologne. The proprietor takes pride in comparing this product of home manufacture with the best imported colognes. Delicacy of fragrance is combined with lasting and invigorating qualities. P 47. 203
- 207 Mitchell, Geo. E., Lowell, Mass.—Cologne. N 53. 203
- 207<sup>a</sup> California Distilling Co., New York, N. Y.—Essential oils and fruit extracts. P 48. 203
- 208 Hambleton, J., & Son, Philadelphia, Pa.—Bay rum, pomades, cosmetics, colognes, extracts, hair tonics, etc. P 43. 203
- 209 Weaver, James B., Philadelphia, Pa.—Cologne, Florida water, bay rum. T 49. 203
- 209<sup>a</sup> Oriental Powder Mills, Boston, Mass.—Imitation samples of military, sporting, and blasting powder. P 43. 204
- 210 Barber Match Co., Akron, O.—Drawing-room and sulphur matches. T 44. 204
- 211 Toy, Bickford, & Co., Simsbury, Conn.—Safety fuses. T 45. 204
- 211<sup>a</sup> Du Pont de Nemours, E. I., Wilmington, Del.—Powder canisters and saltpetre. T 40. 204
- 212 Laffin & Rand Powder Co., New York, N. Y.—Gunpowder, empty packages, patent cartridges for mining, fuses, crude materials. N 62. 204
- 212<sup>a</sup> Zennig, R. H., & Co., New York, N. Y.—Wax matches and tapers. P 43. 204
- 213 Hazard Powder Co., Hazardville, Conn.—Sporting and blasting gunpowder. H 71. 204
- 214 Willis, Aug. L., Philadelphia, Pa.—Pyrotechnic log signals. H 71. 205
- 214<sup>a</sup> Harris, H. G., New York, N. Y.—Balloon signals. H 68. 205
- Ceramics — Pottery, Porcelain, Glass, etc.**
- 215 Galloway & Graff, Philadelphia, Pa.—Terra-cotta statuary, vases, tazzas, pedestals, fountains, flower pots, garden edging, etc. B 72. 206
- 216 Neukumet, Philip, Philadelphia, Pa.—Fire bricks, clay retorts, gas-house tiles, and ornamental building brick. X 56. 206
- 216<sup>a</sup> Burns, Russell & Co., Baltimore, Md.—Pressed brick masonry. Y 60. 206
- 217 Moorhead Clay Works, Philadelphia, Pa.—Terra-cotta sewer and water pipes, drain and roofing tiles, garden vases, chimney tops, and flues. (Outside.) 206
- 218 Harvey & Adamson, Philadelphia, Pa.—Drain and sewer pipe, garden vases, statuary, chimney tops, flues, etc. B 72. 206
- 218<sup>a</sup> Davis & Chaddock, Boston, Mass.—Fire bricks. Y 61. 206
- 219 Remmey, Richard C., Philadelphia, Pa.—Chemical apparatus for manufacturing acids. B 68. 206
- 220 Gossin, F., Philadelphia, Pa.—Terra-cotta ware, statuary, vases, fountains, pedestals, etc. B 69. 206
- 221 Bowman, O. O., & Co., Trenton, N. J.—Terra-cotta drain and sewer pipe, chimney tops, and flues; garden vases and statuary. B 71. 206
- 221<sup>a</sup> Alexander, J. Park, Akron, O.—V 62. 206
- a Fire brick. 206
- b Stone ware. 220
- 222 Fritz, John, Philadelphia, Pa.—Terra-cotta work, hanging baskets, rustic flower pots, vases, fern cases, etc.; imitation gas logs. B 69. 206
- 222<sup>a</sup> Ogden, Isaac, Newark, N. J.—Drain pipe. Y 55. 206

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Pottery, Porcelain.

- 233 Scioto Fire Brick Co., Sciotoville, Ohio.**—Fire bricks and fire clays. V 61 to 64. 206
- 233a Dover Fire Brick Co., Canal Dover, O.**—Fire brick. T 63. 206
- 233b Boynton, C. W., & Co., Wood-bridge, N. J.**—Under-drainage tile, hollow building brick, and garden borders. Y 54. 206
- 234 Ambruster, John, Camden, N. J.**—Pressed brick work. X 58. 206
- 235 Union Mining Co., of Allegheny county, Md.**—Fire brick. X 58. 206
- 236 Wood Brothers, Hartford, Conn.**—Drain tiles. W 53. 206
- 237 Hinvest, Robt., New York, N. Y.**—Clamp and band for securing masonry, hollow brick for ventilation, chimney top. (Outside.) 206
- 237a Scattergood, W. W., Rancocas, N. J.**—Drain tile. X 56. 206
- 237b Brick Enameling Co., Philadelphia, Pa.**—Enameled bricks. U 48. 206
- 237c Richardson, Geo., Milwaukee, Wis.**—Artificial Stone and Pipe. T 51 & X 57. 206
- 238 Hewz, A. H., & Co., North Cambridge, Mass.**—Flower pots, fancy earthenware, garden vases, ferneries, battery jars, etc. B 69. 206
- 239 Hall, A., & Son, Perth Amboy, N. J.**—Brick used in chimney of New Jersey State Building. 206
- 240 Maurer, Henry, Perth Amboy, N. J.** and 418 to 422 East Twenty-third street, New York, N. Y.—Roofing tiles used upon the New Jersey State Building. Cheap, light in weight, thoroughly fire-proof, perfectly water-tight. 206
- 241 American Kaolin Co. Works, New Garden, Chester Co., Pa.** office, 233 South Third street, Philadelphia, Pa.—Fire brick, tile, etc. X 58. 206
- 242 Wassel Fire Clay Co., Columbus, O.**—V 63. 206  
a Terra-cotta work. 206  
b Fire brick. 207
- 243 Krescher, B., & Son, Philadelphia, Pa.**—X 56. 206  
a Fire bricks, tiles, blocks, and slabs. 206  
b Clay gas retorts, furnaces, and muffles. 207
- 243a Newton & Co., Albany, N. Y.**—X 56. 206  
a Fire brick. 206  
b Stove linings, heater fire-brick linings, portable clay furnaces. 207
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- 320** Wakefield Rattan Co., Boston, Mass.—Rattan furniture and ornamental ware. T 57. 217
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- 327** Kimbel & Cabus, New York, N. Y.—Parlor furniture and decorations. P 56. 217
- 328** Vaill, E. W., Worcester, Mass.—Patent folding chairs, in great variety. Business established 1861. I claim for my chairs durability, thoroughness of finish, simplicity in folding, and compactness when folded. Very extensive assortment of styles, adapted for parlor, drawing-room, library, veranda, and shipboard; also, a line suitable for tropical climates. On account of limited space allotted, am compelled to make a comparatively meagre exhibit. T 57. 217
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- 335** Karcher's, Daniel M., Sons, Philadelphia, Pa.—Sideboard. P 60. 217
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- 339** Schaestey, Geo. A., New York, N. Y.—Furniture and interior decorations. P 58. 217
- 340** Brown & Bliss, 189 Canal street, New York, N. Y.—Dining-room furniture, extension tables, sideboards, etc. Special manufacturers and exporters of dining-room furniture "*en suite*," including extension tables of every description, with patent slides and patent screw-leg corner block, also sideboards and side tables with leaves of extension table enclosed within. T 50. 217
- 341** Palmer, Theo. J., New York, N. Y.—Rocking or reclining chair on castors. P 53. 217
- 342** Kittle, S. P., No. 303 Canal street, New York, N. Y.—Spring mattresses for under-mattress or with mattress and bolster combined, and made to fold compactly for transportation, when desired; also, spring mattresses with straight frame and elastic edges; others so constructed that both sides and all the edges are alike elastic and most comfortable. A moderate outlay in these goods will insure a most exquisite bed. P 52. 217
- 343** Schenck, Jas. V., New York, N. Y.—Crescent spring mattress. P 51. 217
- 344** Paton, Robt., & Son, New York, N. Y.—Church and school furniture, Sunday-school and lecture-room settees. P 54. 217
- 345** Postawka, L., & Co., Cambridgeport, Mass.—The "X" piano taboret. P 60. 217
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- 354 Griendling, John, 213 N. Second street, Philadelphia, Pa.—Barber's chair, foot-rest, and hair-dressing standard. This chair is easily regulated for shaving and hair-cutting combined. An examination will satisfy any one of its merits. P 51. 217
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- 364 Halm, Bellows, & Butler, Columbus, O.—Furniture. P 50. 217
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- 366 Vollmer, G., Philadelphia, Pa.—Furniture. T 54. 217
- 367 Thole, B., St. Louis, Mo.—Book case. P 59. 217
- 368 Swasey, I. N., M.D., Yonkers, N. Y.—Billiard tables; Trichorum table, a new principle in carpentry, securing a permanently level surface, and new built up work samples from the French Manufacturing Co. of New York City. T 51. 217
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- 374 Schafft, Fridolin, Detroit, Mich.—Sideboard. P 63. 217
- 375 Ransom, D. L., & Co., Buffalo, N. Y.—Adjustable desks and business cabinets, can be adjusted to any position, at any moment, without disarranging any books, papers, etc. Five different styles, for private and general offices. Send for circular. T 50. 217
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- 396 Paine's Furniture Manufactory, Boston, Mass.**—Pulpit and church furniture, case of designs. T 60. 217
- 397 Brunswick, J. M., & Balke Co., Chicago, Ill.**—Billiard tables and materials; ivory and ten-pin balls. T 51. 217
- 398 Collins & Sturgeon, New York, N. Y.**—Reclining chair. T 53. 217
- 399 Ellin, Robt., & Co., New York, N. Y.**—Eagle lecturn carved in oak, sideboard, font, hall chairs, and litany desk. P 52. 217
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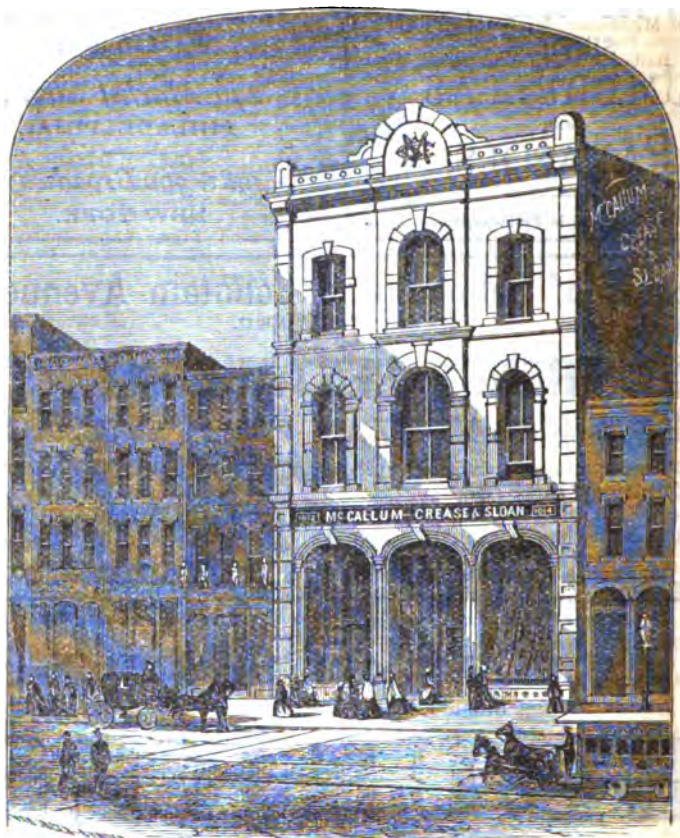
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- 482a Kelly, S. S., Philadelphia, Pa.—Gas brackets, pendants, brass fittings, etc. T 45. 223
- 483 American Reflector Co., Philadelphia, Pa.—Gas and daylight reflectors, lanterns and shades. P 47. 223
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For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26

## Furniture, Construction of Buildings, Woven Goods.

- 505 Cleveland Non-explosive Lamp Co., Cleveland, O., and 42 Barclay street, New York.—Perkins & House's patent metallic kerosene or coal oil safety lamps and filling cans. Thousands of families now using this lamp testify to its superiority; because, 1st, it is perfectly safe from explosion, owing to its scientific structure; 2d, it will not break, being made of metal; 3d, it is rendered perfectly clean by its patent drip-cup; 4th, it uses a very small amount of oil, in proportion to the light it gives, without odor; 5th, it gives a brilliant light, in consequence of its peculiar construction. Our filling can is perfectly safe from explosion, owing to its scientific structure—a flame cannot be communicated to the oil in it, either by accident or design. N 64. 223
- 506 American Calcium Light Co., Philadelphia, Pa.—Calcium light apparatus. T 43. 223
- 507 The Mains Manufacturing Co., New York, N. Y.—Lamps. N 65. 223
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- 517 Lloyd, Supplee, & Walton, Philadelphia, Pa.—Fluting machines. P 72. 225
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- 519 National Wood Manufacturing Co., 950 Broadway, New York, N. Y.—Wood carpeting, parquet and inlaid floors, ornamental hard-wood ceilings, fancy wainscoting, and stair coverings. Send 3 cent stamp for book of design. P 52. 227
- 519a Canopy Frame Co., Willimantic, Conn.—Portable folding canopy frames. P 56. 227
- 520 Johns, H. W., New York, N. Y.—Asbestos roofing, sheathing, and lining felts. P 47. 227
- 521 Ehret, M., Jr., Office, 404 Walnut street, Philadelphia, Pa.—Pavilion situated south of Main Building, to exhibit patent fire and waterproof granulated slag (composition) roofing. State and county rights for sale. (*Outside.*) 227
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- 522a Reisinger Manufacturing Co., Harrisburg, Pa.—Sash locks, line holders, clothes hooks, cellar hoists, broom and wisp holders. P 68. 227
- 523 Walker, M., & Sons, Philadelphia, Pa.—Heavy wrought iron gates at north, south, east, and west entrances of Main Exhibition Building. 227
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- 524 Fisher & Bird, New York, N. Y.—Marble mantels, tablet, marble wainscoting. The white marble mantel is of pure American statuary; the black one is of the finest quality of velvet black, both designed and executed in the highest style of art, at our works, by American artisans. T 50. 227
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- 533 Clinton Wire Cloth Co., Clinton, Mass.—Iron railing, wire cloth, netting, fencing, fire proof lath. T 68. 228
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- 536 Wild, Jos., & Co., New York, N. Y.—Mating and mats of fibre of cocoanut husks. N 77. 229
- 537 Wakefield Rattan Co., Boston, Mass.—Mats and matting. T 57. 229
- 538 Irving Bros., Elwood, N. Y.—Japanese paper carpeting, waterproof building paper. N 75. 229
- 539 Garsed Bros., Frankford, Pa.—Awnings and tickings. N 73. 230
- 540 Farnum, John, & Co., Philadelphia, Pa.—Tickings from Conestoga steam mills, Lancaster, Pa. N 75. 230
- 540a Slater, Wm. S., Providence, R. I.—Bleached cotton goods. N 73. 230
- 541 Bailey, John T., & Co., Philadelphia, Pa.—Bags. B 68. 230

## Woven Goods.

- 541<sup>a</sup> Westport Manufacturing Co., Fall River, Mass.—Carpet warp and cotton batts. D 78. 230
- 542 Thornton, Samuel, & Sons, Philadelphia, Pa.—Cotton fabrics. N 76. 230
- 542<sup>a</sup> Alabama & Georgia Manufacturing Co., West Point, Ga.—Sheeting. N 78. 230
- 543 Berkeley Co., Providence, R. I.—Nainsooks, Victoria lawns, and cambrics. These fabrics are noted for their quality and finish, and are manufactured from either Sea Island, Egyptian, or Peeler cotton. N 75. 230
- 543<sup>a</sup> Slater Cotton Co., Providence, R. I.—Brown and bleached cotton goods. D 78. 230
- 544 Clark Thread Co., Newark, N. J.—Spool cotton. N 76. 230
- 544<sup>a</sup> Sykes, Henry, Chicago, Ill.—Awnings and awning frames. Y 63. 230
- 545 Johnson, Emory, Neptune Twine Mills, Moodus, Conn.—Cotton seine twines, wetting cords, carpet warp, and knitting cotton, manufactured from superior stock and always of a uniform quality. Established in 1832. B 68. 230
- 546 Whitfield, F. E., Sen., Corinth, Miss.—Cotton yarns. N 75. 230
- 547 Semple, Samuel, & Sons, Mt. Holly, N. J.—Spool cotton. Manufacturers of Stuart's "Best six cord" and "Soft Enameled" spool cotton. Stuart & Bro., sole agents, 13 Bank street, Philadelphia. N 74. 230
- 547<sup>a</sup> Lawrence, Waterbury, & Co., New York, N. Y.—Bagging. D 78. 230
- 548 Walcott & Campbell, New York Mills, Oneida county, N. Y.—Shirtings, wide sheetings, cottonades, and knitting yarns. N 75. 230
- 548<sup>a</sup> Lewiston Mills, Lewiston, Me.—Tickings, cottonades, chevot shirtings, duckings, seamless cotton bags. R 78. 230
- 549 Westbrook Manufacturing Co., Portland, Me.—Ship's cotton duck. B 70. 230
- 549<sup>a</sup> Lawrence Manufacturing Co., Lowell, Mass.—Bleached and unbleached cotton goods. N 73. 230
- 550 Powhatan Mills, Providence, R. I.—"Pocahontas" and "Wealth of the Country" bleached and brown muslins, well adapted for family and shirt maker's use. N 74. 230
- 550<sup>a</sup> Merrick Thread Co., Holyoke, Mass.—Ready-wound bobbins for sewing machine shuttles. H 74. 230
- 551 Saratoga Victory Manufacturing Co., Boston, Mass.—Silesias, cambrics, and fancy cottons. F 73 and 74. 230
- 551<sup>a</sup> Cutler Manufacturing Co., Warren, R. I.—Hosiery, cops, yarns, carpet warp, knitting cotton. D 78. 230
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- 552<sup>a</sup> Foustdale Manufacturing Co., Providence, R. I.—Bleached cotton goods. N 73. 230
- 553 Great Falls Manufacturing Company, Rockingham, N. C.—Rockingham sheeting. N 75. 230
- 554 Peckham Manufacturing Company, Providence, R. I.—Kentucky jeans. B 76. 230
- 555 Androscoggin Mills, Lewiston, Me.—Sheeting, shirting, jeans, bags, etc. R 78. 230
- 556 Hill Manufacturing Company, Lewiston, Me.—Bleached and unbleached sheetings and shirtings. R 78. 230
- 557 Continental Mills, Lewiston, Me.—Sheetings and shirtings. R 78. 230
- 558 Barker Mills, Auburn, Me.—Bleached and unbleached sheetings. R 78. 230
- 559 Smith, James Y., Manufacturing Co., Providence, R. I.—Bleached and brown cotton goods. N 74. 230
- 560 Evansville Cotton Manufacturing Co., Evansville, Md.—Brown sheetings and drills, assorted yarns. N 74. 230
- 561 King Philip Mills, Fall River, Mass.—Brown and bleached sheetings, cambric muslins, and rolled jacconets. Selling agents, Whorton, Atkinson & Co., Philadelphia; Converse, Staunton & Co., Boston and New York; Turnbull, Sweet & Co., Baltimore. N 76. 230
- 562 Hope Company, Providence, R. I.—Shirting. N 74. 230
- 563 Lonsdale Company, Providence, R. I.—Sheetings, cambric muslin, silesias, jacconets, Victoria lawns, sateens. N 74. 230
- 564 Blackstone Manufacturing Company, Providence, R. I.—Print cloths shirtings, umbrella cloths. N 74. 230
- 565 Gambrill, Sons & Co., Baltimore, Md.—Cotton duck for sails, tents, and awnings. D 78. 230
- 566 Wamsutta Mills, New Bedford, Mass.—Shirting and sheeting. N 74. 230
- 567 Shaw, James G., New Castle, Del.—Single-carded cotton warps. N 74. 230
- 568 Riddle, Jas., Son & Co., Wilmington, Del.—Brandywine Mills tickings. N 74. 230
- 569 Wauregan Mills, Wauregan, Conn.—Cotton goods. N 74. 230
- 570 Ponemah Mills, Taftville, Conn.—Plain and fancy cotton goods. N 74. 230
- 571 Gabriel, Henry, & Sons, Allentown, Pa.—Counterpanes, bed coverlets, quilts, and bed spreads. F 68. 230
- 572 Stafford & Co., Providence, R. I.—Cotton yarns, hosiery cops, twilled goods. N 76. 230
- 573 Minot, Hooper, & Co., Boston, Mass.—Bleached cotton goods. F 69. 230
- 575 Farwell Mills, Lisbon, Me.—Bleached and brown cottons. R 78. 230
- 576 Morse, Kaley, & Co., Milford, N. H.—Knitting cotton. E 78. 230
- 577 Putnam Manufacturing Co., Providence, R. I.—Colored cotton goods. N 73. 230
- 577<sup>a</sup> White, R. T., & Son, Philadelphia, Pa.—Rag carpet warps and cotton batts. D 78. 230
- 578 Clinton Manufacturing Co., Providence, R. I.—Bleached cotton goods. N 73. 230

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Woven Goods.

- 579 Bridge Mill Cotton Manufacturing Co., Providence, R. I.—Bleached cotton goods. N 73. 230
- 580 Manville Co., Providence, R. I.—Cotton goods, bleached and colored. N 73. 230
- 581 Ross, John L., Providence, R. I.—Bleached, unbleached, and colored cotton goods. N 73. 230
- 582 Social Manufacturing Co., Providence, R. I.—Brown, bleached, and colored cotton goods. N 73. 230
- 583 Warren Manufacturing Co., Warren, R. I.—Bleached and colored cotton goods. N 73. 230
- 584 Peabody Mills, Providence, R. I.—Colored cotton goods. N 73. 230
- 585 Dyerville Manufacturing Co., Providence, R. I.—Brown and bleached cotton goods. N 73. 230
- 586 Ballou, Geo. C., & Son, Providence, R. I.—Brown, bleached, and colored cotton cloth. N 73. 230
- 587 Silver Spring Bleaching & Dyeing Co., Providence, R. I.—Bleaching, dyeing, and finishing the various grades and styles of cotton cloth. N 73. 230
- 588 Hooper, Wm. E., & Sons, Baltimore, Md.—Awning stripes, cotton duck. D 78. 230
- 589 Boston Manufacturing Co., Boston, Mass.—Cotton goods. B 76. 230
- 590 Cabot Manufacturing Co., Boston, Mass.—Cotton goods. B 70. 230
- 591 Gale & Co., Boston, Mass.—Lawn and other tents, canopies, and clothes dryer. (Outside.) 230
- 592 Greene & Daniels, Pawtucket, R. I.—Ivory finish and six-cord spool cotton; gray, bleached, and dyed cotton yarns. N 76. 230
- 593 Fall River Bleachery, Fall River, Mass.—Bleached cottons, shirtings, and sheetings. N 76. 230
- 594 Lowell Bleachery, Lowell, Mass.—Bleached and colored cotton fabrics. N 73. 230
- 595 Ameskeag Manufacturing Co., Manchester, N. H.—Tickings, denims, awning stripes, cotton flannels, ginghams, fancy shirtings, jeans, shirtings, sheetings, drillings. N 74. 230
- 596 Naumkeag Steam Cotton Co., Salem, Mass.—Sateens, Pequot wide sheetings, bleached and unbleached, 5-4, 6-4, 7-4, 8-4, 9-4, 10-4; Naumkeag twilled sheetings, 8-4, 9-4, 10-4; Pequot, 36 inch and 40 inch; El Dorado, 36 and 40 inch sheetings. The product of these mills has a reputation for softness and durability, and for general excellence; the cotton used is especially selected with a view to securing these qualities, and the greatest care is used in their manufacture. N 74. 230
- 597 Massachusetts Cotton Mills, Lowell, Mass.—Sheetings, shirtings, drillings, etc. N 73. 230
- 598 Tremont & Suffolk Mills, Lowell, Mass.—Brown and bleached cotton flannels, twenty-six varieties, from the lightest to the heaviest grade, for summer, fall, and winter wear, from twenty-seven to thirty-six inches in width, superior in quality of material, grade, and finish; Suffolk drills, blue, brown and bleached. Sheetings, shirtings, and corset jeans. N 73. 230
- 599 Appleton Co., Lowell, Mass.—Unbleached sheetings and drillings. N 73. 230
- 600 Boott Cotton Mills, Lowell, Mass.—Brown and bleached cottons. N 73. 230
- 601 Shroder, F., & Co., New York, N. Y.—Brown cottons, drills, and nankeens. B 75. 230
- 602 Nashua Manufacturing Co., Nashua, N. H.—Brown and bleached cottons, cotton flannels, printings. N 77. 230
- 603 Jackson Co., Nashua, N. H.—Heavy brown cottons. N 77. 230
- 604 Ocean Mills, Nashua, N. H.—Brown and bleached cottons. N 77. 230
- 605 Shetucket Co., Norwich, Conn.—Fancy stripes, denims, ducks, chevrons. N 77. 230
- 606 Falls Co., Norwich, Conn.—Cotton duck, fancy colored duck tickings. N 77. 230
- 607 The Utica Steam Cotton Mills, Utica, N. Y.—Very heavy and fine brown and bleached sheetings and shirtings, from one to three yards wide. N 74. 230
- 608 Mount Vernon Co., Baltimore, Md.—Duck and sail twine. Manufacturers of cotton sail duck, enameling duck, hose and belting duck, U. S. hammock, bag, and cot duck; machine apron, and a superior article of duck for paper-makers' felting; from seven to fifteen ounce army tent and awning duck, plain and in stripes; cotton canvas, from nine to one hundred and thirty inches wide; sail twine, all numbers. D 78. 230
- 609 Hadley Co., Boston, Mass.—Cotton yarns and warps, spool cottons, threads; harness and seine twines. N 75. 230
- 610 Union Wadding Co., Providence, R. I.—Cotton wadding, batting, and machinery waste. F 74. 230
- 611 Smith, H. E., & Co., Providence, R. I.—Cotton yarns for hosiery, shawl, and carpet manufacture. N 74. 230
- 612 Richardson, C. D., & Co., Philadelphia, Pa.—Fents. (Outside.) 230
- 613 Hale, B. S., & Co., Lawrence, Mass.—Fish lines. N 75. 230
- 614 Laconia Company, Biddeford, Me.—Sheetings, shirtings, drills, and jeans. R 78. 230
- 615 Pepperill Manufacturing Co., Biddeford, Me.—Sheetings, shirtings, drills, and jeans. R 78. 230
- 616 Otis Company, Palmer, Mass.—Denims. N 75. 230
- 617 Palmer Mills, Palmer, Mass.—Dress goods. N 75. 230
- 618 Trainer, D., & Sons, Linwood Station, Pa.—Cotton yarns and tickings. C 78. 230
- 618 Brinckerhoff, Turner, & Co., New York, N. Y.—Duck, canvas, ravens, awning stripes, bags, twines, bunting. D 78. 230
- 619 Washington Manufacturing Co., Gloucester, N. J.—Printing cloths, etc. N 75. 230
- 622 Monadnock Mills, Claremont, N. H.—Quilts, counterpanes, and wide sheetings. H 78 and N 74. 230

## Woven Goods.

- 623 American Linen Co., Fall River, Mass.—Printing cloths. B 77. 230
- 624 Annawan Manufactory, Fall River, Mass.—Printing cloths. B 77. 230
- 625 Barnard Manufacturing Co., Fall River, Mass.—Printing cloths. B 77. 230
- 626 Border City Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 627 Chace Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 628 Flint Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 629 Granite Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 630 Mechanics Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 631 Merchants Manufacturing Co., Fall River, Mass.—Printing cloths. B 77. 230
- 632 Metacomet Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 633 Narragansett Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 634 Osborn Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 635 Richard Borden Manufacturing Co., Fall River, Mass.—Printing cloths. B 77. 230
- 636 Sagamore Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 637 Shove Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 638 Slade Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 639 Stafford Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 640 Tecumseh Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 641 Troy Cotton and Woolen Manufactory, Fall River, Mass.—Printing cloths. B 77. 230
- 642 Wampanoag Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 643 Weetamoe Mills, Fall River, Mass.—Printing cloths. B 77. 230
- 644 Dwight Manufacturing Co., Chicopee, Mass.—Brown and bleached sheetings and shirtings. F 69. 230
- 645 Lyman Mills, Holyoke, Mass.—Brown and bleached sheetings and shirtings, drills, lawns, cambrics, cotton flannels, etc. F 69. 230
- 646 Great Falls Manufacturing Co., Great Falls, N. H.—Bleached and brown sheetings and shirtings. F 69. 230
- 647 Schum, Philip, Lancaster, Pa.—Coverlets and counterpanes. Well known manufacturer of genuine Lancaster quilts, coverlets, counterpanes, carpets, cradle, bureau and tidy covers, stocking yarns, woolen carpet chains, etc. All kinds of dyeing done. These goods being all of my own manufacture, made of the very best of material, I guarantee them as represented and to give entire satisfaction in every respect. G 78. 230
- 647a Wood, Wm., & Co., Philadelphia, Pa.—Cottonades. B 77. 230
- 648 Methuen Mill, New York, N. Y.—Jute bagging. F 76. 230
- 649 Webster Mills, New York, N. Y.—Jute bagging. F 76. 230
- 650 Nevins Mill, New York, N. Y.—Jute bagging. F 76. 230
- 651 Mississippi Mills, Wesson, Miss.—Yarns, cotton, cottonades. F 76. 230
- 652 Bullock, George & James M., Conshohocken, O.—Cotton warp. F 75. 230
- 653 Wortendyke Manufacturing Co., Wortendyke, N. J.—Lamp wicks and cotton yarns. N 75. 230
- 654 Moss Manufacturing Co., West- erty, R. I.—Shirtings. N 74. 230
- 655 Harris Manufacturing Co., Providence, R. I.—Bleached shirtings. The "Gem of the Spindle" exemplifies the limit of fineness consistent with durability. N 74. 230
- 656 Knight, B. B., & R., Providence, R. I.—Bleached cotton goods. N 75. 230
- 657 Glasgow Company, South Hadley Falls, Mass.—Ginghams, yarns. N 74. 230
- 658 Allendale Company, Providence, R. I.—Bleached shirtings and sheetings. N 74. 230
- 659 Groton Manufacturing Co., Philadelphia, Pa.—Bleached goods. N 74. 230
- 660 Franklin Manufacturing Co., Providence, R. I.—Bleached cottons. N 74. 230
- 662 Tucker, Carter, & Co., New York, N. Y.—Bagging. B 69. 230
- 663 Renfrew Manufacturing Co., South Adams, Mass.—B 75. 230  
a Cotton warps, skirtings. 230  
b Ginghams. 231  
c Cotton dress goods. 232
- 664 Gloucester Gingham Mills, Gloucester City, N. J.—N 76. 230  
a Cottonades, shirtings. 230  
b Ginghams, dress goods. 231
- 665 Langdon Manufacturing Co., Manchester, N. H.—Brown and bleached shirtings; fine brown and bleached G. B. shirtings. N 74. 230
- 666 Whittenton Manufacturing Co., Taunton, Mass.—N 76. 230  
a Cottonades, shirtings, tickings, denims, and awnings. 230  
b Dress goods and fancy checks. 231
- 667 York Manufacturing Co., Saco, Me.—Geo. C. Richardson & Co., selling agents, Boston and New York. N 74. 230  
a Cottonades light and heavy, ticking 28 inches by 32 inches wide, denims plain, striped, and plaid; shirtings and skirtings. 230  
b Dress goods, in great variety; nankins, and seersuckers. 231
- 668 Everett Mills, Lawrence, Mass.—B 73. 230  
a Fancy cottons, cottonades, ticking, denims, chevrot. 230  
b Stripes, ginghams, dress goods. 231
- 669 Davoll Mills, Fall River, Mass.—Selling agents, Wharton, Atkinson & Co., Philadelphia; E. C. Whitman, New York. N 76. 230  
a Sheetings, pillow muslins, shirtings, sil- 230  
b Fancy cotton fabrics. 232

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26



## Woven Goods, Felting, Yarn.

- 670 Hamilton Manufacturing Co.,** Lowell, Mass.—N 73.  
 a Tickings, drillings, and canton flannels. 230  
 b Printed and dyed calicoes, shirting and awning stripes. 232
- 671 Holt, R., Paterson, N. J.—N 74.**  
 a Cotton and Turkish towels, terry cloth, dusters, etc. 230  
 b Linen towels. 233
- 672 Stark Mills, Manchester, N. H.—N 74.**  
 a Seamless bags, sheetings, and drills, over-all and double ducks. 230  
 b Linen crash toweling. 233
- 673 Millville Manufacturing Co.,** R. D. Wood & Sons, Philadelphia and New York, sole agents.—F 75.  
 a Bleached shirtings, cambrics, silesias. 230  
 b Printed linings, umbrella cloths, vel-lums. 231  
 c Window hollandes, tilottings, etc. 233
- 674 Bates Manufacturing Co.,** Lewiston, Me.—R 78.  
 a Shirtings, skirtings, quilts, jeans, towels, knitting cotton, etc. 230  
 b Ginghams, damask, silesias. 232  
 c Linen checks. 233
- 675 Ripka & Elton Mills, Philadelphia, Pa.—Cotton manufactures.** N 74. 231
- 676 Lancaster Mills, Clinton, Mass.—Fancy ginghams.** N 77. 231
- 677 Belfast Mills, Philadelphia, Pa.—Ginghams.** N 76. 231
- 678 Albion Print Works, Conshohocken, Pa.—Solid colors suitings, plain blacks, grays, mourning prints, shirtings, and printed articles for men.** N 73. 232
- 679 Pacific Mills, Lawrence, Mass.—B 73.**  
 a Calicoes. 232  
 b Lawns, percales. 233
- 679 Hartel, Andreas, & Co., Penny-pack Print Works, Philadelphia, Pa.—Madder and fancy prints and shirtings.** N 75. 232
- 680 Brown, David S., & Co., Philadelphia, Pa.—Madder fancies, shirtings and mournings from Gloucester Manufacturing Co., Gloucester, N. J.; aniline, alexrine, oil, and madder colors and shirtings from Ancona Printing Co., Gloucester, N. J.** N 77. 232
- 681 Simpson, Wm., & Sons, 126 Chestnut street, Philadelphia, Pa.—Calico prints in mourning, fancy, and shirting styles. Manufacturers and calico printers of the popular alpaca finish, solid blacks, Berlin solids of all colors, aniline blacks, mourning prints, silver grays, Eddystone chocolates, hair cloth chevrons, and fancy prints. These styles are all fast colors, and are printed exclusively on the best extra 64 square cloth.** N 75. 232
- 682 Pretty, Grime, & Co., Philadelphia, Pa.—Calico prints.** N 74. 232
- 683 Green, S. H., & Sons, Clyde Bleachery and Print Works, River Point, R. I.—Printed calicoes.** N 74. 232
- 684 Richmond Manufacturing Co., Providence, R. I.—Printed calicoes.** N 75. 232
- 685 Manchester Mills, Manchester, N. H.—Prints.** N 73. 232
- 686 American Print Works, Fall River, Mass.—Printed calicoes, percales, cambrics, shirtings, indigo blues, greens, robes, seersuckers, etc. Special styles and colorings printed for export.** N 75. 232
- 687 Hamilton Woolen Co., South-bridge, Mass.—Prints, shirting prints, printed cambrics.** N 74. 232
- 688 Merrimac Mills, Lowell, Mass.—Printed and dyed calicoes.** N 73. 232
- 689 Stevens Linen Works, New York, N. Y.—Plain and twilled linen crashes and diapers.** B 75. 233
- 690 Barbour Flax Spinning Co., Paterson, N. J.—Flax threads.** N 76. 233
- 690 American Linen Thread Co., Mechanicville, Saratoga county, N. Y.—Flax, gilling, and machine threads, warp, filling, and twines. Manufacturers of patent linen thread (on spools and in skeins) of all kinds, numbers, and colors; also, gilling thread, of all numbers; machine, shoe, carpet, fringe, whip, and McKay threads, in all varieties; linen floss, salvage, and hose warp; hose filling, broom and brush twines; pink and variegated twines; loom cord; line and tow yarns. All manufactured from the best foreign stock.** H 75. 233
- 691 McCrossan & Farr, New York, N. Y.—Printed linen and cotton, and white cotton handkerchiefs.** N 76. 233
- 692 American Linoleum Manufacturing Co., New York, N. Y.—Linoleum floor cloth.** N 77. 234
- 694 Blabon, Geo. W., & Co., Philadelphia, Pa.—Floor, carriage, upholstery, and table oil cloths and window shades.** N 77. 234
- 696 Violet & Durlach, Elisabeth, N. J.—Floor oil cloths.** F 73. 234
- 698 Potter, Thos., Sons & Co., Philadelphia, Pa.—Oil cloths.** N 77. 234
- 700 Brasher, Wm. M., & Co., Brooklyn, N. Y.—Floor oil cloths.** F 71. 234
- 701 Reeve, R. H. & B. C., Camden, N. J.—Oil cloths.** F 71. 234
- 702 Powers, D., & Sons, New York, N. Y.—Floor oil cloths.** F 77. 234

## Woven and Felted Goods of Wool and Mixture of Wool.

- 703 Shaffner & Stringfellow, Philadelphia, Pa.—Knitting cotton and Germantown wool.** B 75. 235
- 703a Knox Woolen Co., Camden, Me.—Paper makers' feltings and machinery cloths.** R 78. 235
- 704 Bacon, Chas. N., Winchester, Mass.—Felts for polishing, printing, erasing, etc.; cotton and wool wadding.** N 74. 235
- 706 New England Co., Rockville, Conn.—Fine fancy cassimeres, finest wool, fine spinning, indigo colors. The first mill in America to make fancy cassimeres.** B 76. 235
- 705a Noske, Henry, Philadelphia, Pa.—Woolen felts.** F 72. 235
- 706 Philadelphia Worsted Spinners' Association, Philadelphia, Pa.—Worsted yarns.** F 75. 235

## Woven and Felted Goods.

- 707 Midnight Yarn Co., Philadelphia, Pa.**—Woolen knitting and Germantown yarns, representing process of manufacture. B 77. 235
- 708 Thornton, Samuel, & Sons, Philadelphia, Pa.**—Woolen fabrics. N 76. 235
- 709 Phillips, James, Jr., Fitchburg, Mass.**—Fine worsted coatings and suitings. Hunt, Catlin, & Valentine, sole agents, 107-113 Franklin street, New York, N. Y. B 77. 235
- 709<sup>a</sup> Kirkman, James, Chester, Pa.**—Doeskins. B 78. 235
- 710 Ledward, J., & Son, Chester, Delaware county, Pa.**—Cassimeres and doeskins. B 76. 235
- 711 Horstmann, Wm. H., & Sons, Philadelphia, Pa.**—Woolen knitting yarns. These goods are known generally as Germantown, balmoral, cashmere, saxonian, and stocking yarns. They are particularly noted for brilliancy of colors, variety of shades, evenness of thread, and the low prices at which they are sold. H 73. 235
- 712 Globe Woolen Co., New York, N. Y.**—Fancy cassimeres. F 74. 235
- 713 Dryfoos, L., & Co., New York, N. Y.**—Felt skirts, embroidered and braided; Italian cloth skirts, trimmed and quilted. B 77. 235
- 713<sup>a</sup> Kent Woolen Co., Centreville, R. I.**—Cassimeres. B 74. 235
- 713<sup>b</sup> Stillwater Woolen Mills, Stillwater, R. I.**—Cassimeres. B 74. 235
- 714 Worumbo Manufacturing Co., Lisbon Falls, Me.**—Moscow beaver and other overcoatings. R 78. 235
- 715 Bel Air Manufacturing Co., Pittsfield, Mass.**—Fancy all-wool cassimeres. F 73. 235
- 716 Burlington Woolen Co., Winoski Fall, Vt.**—Woolens, castorines, moscows, kerseys, broadcloths, doeskins, elastic doeskins, elysians. F 73 and 74. 235
- 717 Broad Brook Co., Broad Brook, Conn.**—Fancy cassimeres. F 75. 235
- 718 Weybosset Mills, Providence, R. I.**—Fancy cassimeres. Samples of regular production made for the general market. Wendell Hutchinson & Co., New York, selling agents. F 74. 235
- 719 Howard, R., & Son, Apponang, R. I.**—Woolen stocking yarns, fancy and plain colors. B 75. 235
- 719<sup>a</sup> State of Oregon (by A. J. Dufur).**—Woolen fabrics. H 71. 235
- 720 Wanskuck Co., Providence, R. I.**—Worsteds coatings, overcoatings, kerseys. B 75. 235
- 721 Rodman, Robt., La Fayette, R. I.**—Doeskins. N 75. 235
- 722 Sawyer Woolen Mills, Dover, N. H.**—Silk and wool cassimeres, fancy cassimeres, double and twist cassimeres. F 75. 235
- 722<sup>a</sup> Clinton Mills Co., Norwich, Conn.**—B 74. 235  
a Tweeds and repellents. 235  
b Blankets. 237
- 723 Hinsdale Bros., Hinsdale, Mass.**—Kerseys, beavers, worsted suitings, etc. B 74. 235
- 724 Rockville Manufacturing Co., Rockville, Conn.**—Fancy cassimeres and worsteds. B 74. 235
- 725 Hockanum Co., Rockville, Conn.**—Fancy cassimeres and worsteds. B 74. 235
- 727 Eddy's, Jesse, Sons, Fall River, Mass.**—Woolens for men's wear. F 74. 233
- 728 U. S. Bunting Co., Lowell, Mass.**—Bunting, flags, worsted damasks and moreens, skirtings, and dress bustines. H 76. 235
- 729 Middlesex Co., Lowell, Mass.**—Woolen goods. B 77. 235
- 729<sup>a</sup> Shuler & Benninghofen, Hamilton, O.**—Felts for paper-makers. B 76. 235
- 729<sup>b</sup> Uxbridge Woolen Co., Uxbridge, Mass.**—Cassimeres. B 74. 235
- 730 Germania Mills, Holyoke, Mass.**—Faskimos, doeskins, and fur beavers, overcoatings. C 78. 235
- 731 Norway Plains Co., Rochester, N. H.**—Blankets. B 73. 235
- 732 Norwich Woolen Co., Norwich, Conn.**—Blankets and repellents. B 73. 235
- 733 Union Manufacturing Co., Wolcottville, Conn.**—Black doeskins. B 73. 235
- 734 Meriden Woolen Co., West Meriden, Conn.**—Fancy cotton warp cassimeres and coatings. B 73. 235
- 734<sup>a</sup> Baltic Woolen Mills, Philadelphia, Pa.**—Woolen goods. F 72. 235
- 735 Niantic Woolen Mills, Norwich, Conn.**—Suitings and repellents. B 73. 235
- 736 Mason, C. F., & Co., Providence, R. I.**—Fancy cassimeres. B 76. 235
- 737 Wood, Morrell, & Co., Woodvale Woolen Mills, Johnstown, Pa.**—Cassimeres made from half-blood wool. B 77. 235
- 738 Kirkman, James, Chester, Pa.**—Doeskins. B 78. 235
- 740 Peirce, C. W. & J., Bristol, Pa.**—G 78. 235  
a Polishing felts and crumb cloths. 235  
b Skirts. 238
- 741 Mississippi Mills, Wesson, Miss.**—Wool fillings, jeans, cassimeres, tweeds, lineys. F 76. 235
- 742 Bullock, Geo. & Jas. M., Conshohocken Woolen Mills, Conshohocken, Pa.**—Doeskins, moscows, beavers, cloth. F 75. 235
- 743 Fox, Henry, & Co., Urbana, O.**—D 78. 235  
a Cassimeres, tweeds, satinets, and yarns. 235  
b Flannels. 236
- 744 Belfast Mills, Philadelphia, Pa.**—N 76. 235  
a Cheviots. 235  
b Dress goods. 238
- 745 Roy, Jas., & Co., West Troy, N. Y.**—F 77. 235  
a Suitings and yarns. 235  
b Woolen shawls. 237
- 746 Fay, C. J., Camden, N. J.**—F 74. 235  
a Felt roofing and siding. 235  
b Ceiling and floor carpeting. 236

## Woven Goods.

- 747 McKee, Jos. D., Penn Knitting Mills, Philadelphia, Pa.—N 74.  
 a Cloths, fancy woolen goods. 235  
 b Worsted shawls. 237
- 748 Bates Manufacturing Co., Lewiston, Me.—R 78.  
 a Beavers and repellents. 235  
 b Dress goods. 238
- 749 Lippitt Woolen Co., Providence, R. I.—B 73.  
 a Elysian beaver overcoatings, fancy cassimeres, and suitings. 235  
 b Flannels. 236
- 750 Peace Dale Manufacturing Co., Peace Dale, R. I.—F 77.  
 a Cassimeres, coatings, lastings, etc. 235  
 b Woolen shawls. 237
- 751 Schofield, Seville, Philadelphia, Pa.—B 74.  
 a Piece goods and coatings. 235  
 b Blankets. 237
- 752 Camden Woolen Mills, Philadelphia, Pa.—B 76.  
 a Woolen goods, cassimeres, suitings, cloakings, repellents. 235  
 b Plaid opera flannels. 236  
 c Dress goods, etc. 238
- 753 Piqua Woolen Mills, F. Gray, O'Ferrall & Co., Piqua, O.—B 75.  
 a Paper-makers' fourdrinier and cylinder wet and press felts and jackets, for all kinds of paper. All felts warranted. 235  
 b Flannels. 236  
 c Blankets. 237
- 754 Washington Mills, Lawrence, Mass.—F 73 and 74.  
 a Worsted coatings, cloakings, and repellents. 235  
 b Flannels. 236  
 c Worsteds goods, shawls, and dress goods. 238
- 755 Landenberger's, Martin, Sons, Philadelphia, Pa.—F 67.  
 a Worsteds coatings and yarns. 235  
 b Shawls. 237  
 c Dress goods. 238
- 756 Dobson, Jno. & Jas., Philadelphia, Pa.—H 77.  
 a Cloths. 235  
 b Blankets. 237  
 c Carpets. 239
- 757 Steffan, F., & Co., Philadelphia, Pa.—H 76.  
 a Coatings. 235  
 b Shawls. 237  
 c Worsteds dress goods. 238
- 758 Pontoosuc Woolen Manufacturing Co., Pittsfield, Mass.—F 76.  
 a All-wool cloths and repellents. 235  
 b Sleeping car blankets and summer dusters. 237  
 c Dress goods. 238  
 d Carriage rugs. 239
- 759 Belvidere Woolen Manufacturing Co.—Flannels. F 74. 236
- 761 Ballard Vale Mills, New York, N. Y.—Fine white flannels. B 77. 236
- 762 Waumbeck Co., New York, N. Y.—Plain white flannels. B 77. 236
- 763 Norway Plains Co., New York, N. Y.—Plain white flannels. B 77. 236
- 764 Lucas, B., & Co., New York, N. Y.—Plain white domests and Shakers. B 77. 236
- 765 Groveland Mills, New York, N. Y.—Scarlet, yellow, and blue plain flannels, scarlet and blue twilled flannels, scarlet Shaker opera flannels. B 77. 236
- 766 Columbia Spring Co., New York, N. Y.—Fancy flannels. B 77. 236
- 767 Stott, C. H. & F. H., New York, N. Y.—Mixed twilled flannel. B 77. 236
- 768 Titus, E., & Sons, New York, N. Y.—White and Shaker flannels. B 77. 236
- 770 Gilbert, Geo. H., Manufacturing Co., Ware, Mass.—F 72.  
 a Flannels—white, opera, silk warp, plaid, moleskin, swansdown, gauze, medicated, etc. 236  
 b Blankets. 237
- 771 Bachman, S., New York, N. Y.—Shawls. B 75. 237
- 771a Sandford Mills, Sandford, Me.—Carriage robes. R 78. 237
- 772 Gibson & Tyler, New York, N. Y.—Fine white blankets. B 77. 237
- 772a Bloodgood, Mrs. I. S., New York, N. Y.—Embroidered afghans. N 52. 237
- 773 Waterloo Woolen Manufacturing Co., Waterloo, N. Y.—Woolen shawls. B 77. 237
- 773a Bishop & Northrup, Wyandotte, Mich.—Woolen robes, mats, and dusters. F 71. 237
- 774 Mission Woolen Mills, San Francisco, Cal.—B 75.  
 a Blankets. 237  
 b Woolen fabrics. 238
- 775 Arlington Mills, Lawrence, Mass.—Black alpacas, in ten qualities; black mohair brillantines, in five qualities; figured mohair brillantines, in two qualities; and roubaix poplins, in assorted colors. The black alpacas and mohair brillantines are "warp dyed," and are made from the choicest materials, in the most thorough manner. Especial attention is invited to the softness of finish, brilliancy of color and lustre, uniformity and perfection of manufacture. The roubaix poplin is a "yarn dyed" fabric,—not dyed in the piece,—consequently, the strength of the fibre is preserved, and the color made more permanent than if "piece-dyed." The peculiarity of the finish is such that the goods will not cockle. F 77. 238
- 775a Pacific Mills, Lawrence, Mass.—Poplins, alpacas, serges, cashmeres, reps, jacquards, cretonnes, jaconets, and cr pe. B 73. 238
- 776 Peckham Manufacturing Co., Providence, R. I.—Woolen and merino knitting yarns, tweeds, doeskins. B 76. 238
- 777 Manchester Mills, Manchester, N. H.—Worsted dress goods. N 73. 238
- 778 Turner, John, Norwich, Conn.—Dyed and printed worsted, woolen, and cotton yarns, for weaving, knitting, etc. B 77. 238
- 779 Tunxis Mills, Poquonnock, Conn.—White and colored worsted yarns; process of manufacture from raw wool. B 76. 238
- 780 Farr Alpaca Co., New York, N. Y.—Alpacas, serges, cashmeres, fancy linings. B 74. 238
- 781 Hamilton Woolen Co., Southbridge, Mass.—Delaines, reps. N 74. 238

## Woven Goods, Carpets, Silk.

- 782 Wood, Wm., & Co., Philadelphia, Pa.—Wool mixture suitings. B 77. 238
- 782a Chapman & Bros., Belfast, Me.—Dry goods. N 76. 238
- 783 Walshaw, Wm., Saxonville, Mass.—Colored wool and yarns. F 69. 238
- 783a White, Payson & Co., Boston, Mass.—Cotton and worsted textile fabrics. N 73. 238
- 784 Lowell Manufacturing Co., Boston, Mass.—F 77.  
a Seiges and lastings. 238  
b Wilton and Brussels, two and three ply ingrain carpeting. 239
- 785 Blake, C. H. & F. D., New York, N. Y.—Alpacas, mohairs, cashmeres, and worsted serges. B 75. 238
- 786 Wood & Haslam, Camden, N. J.—B 77.  
a Turkey red yarn. 238  
b Quilts, table cloths. 241
- 787 Smith, Alex., & Sons Carpet Co., Yonkers, N. Y.—Power loom, Axminster, tapestry Brussels, and tapestry ingrain carpetings. F and H 73 to 76. 239
- 787a McCallum, Crease, & Sloan, Philadelphia, Pa.—Ingrain carpets. H 75. 239
- 788 Wentworth, C. B., & Co., Boston, Mass.—Star-quilted carpet lining. F 75. 239
- 788a Hutchison, J. & H., Brooklyn, N. Y.—Rugs and mats. O 78. 239
- 789 Gibb & Co., Philadelphia, Pa.—Rag carpet. F 77. 239
- 789a Seffarlen & Frits, Philadelphia, Pa.—Carpet warps. F 77. 239
- 790 Dornam, Bros. & Co., Philadelphia, Pa.—Ingrain carpets and damask. F 77. 239
- 790a Mayall, Miles, Boston, Mass.—Carpet linings and stair pads. D 78. 239
- 791 Bromley, Jno., & Sons, Philadelphia, Pa.—Ingrain and damask Venetian carpets. H 77. 239
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- 833 Dale Manufacturing Co., Paterson, N. J.—Silk, mohair, and fancy trimming braids; cords, bindings, hat bands, braided sewings, and watch guards. H 75. 249
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- 836 Sutor Bros., New York, N. Y.—Embroidery braids, put up on patent cards, stating correctly the measurement of each skein. F 71. 249
- 837 Nottingham Lace Works, Brooklyn, N. Y.—Guipure, thread, cashmere, and other laces and trimmings; hair nets. Manufacturers from original designs of guipure laces, thread, cashmere, Spanish and millinery laces, silk purlings, lace fringes, hair nets, etc.; also, a specialty of all desirable styles of silk lace ties and scarfs. Orders sent to A. G. Jennings, 428 Broome street, New York. H 75. 249
- 838 Turner, John, Norwich, Conn.—Picture and furniture cords. B 77. 249
- 839 Goff, D., & Son, Pawtucket, R. I.—Alpaca skirt braid. F 71. 249
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- 842 Häpke, A. B., Harrisburg, Pa.—Knit goods and embroideries. F 69. 250
- 842a Lowery & Williams, Utica, N. Y.—Merino and cotton underwear. F 73. 250
- 843 Moore, Leopold, Philadelphia, Pa.—B 69.  
 a Wrappers, shirts. 250  
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- 843a Munson Manufacturing Co., Cohoes, N. Y.—Merino and cotton underwear. F 73. 250
- 844 Sachse, F., & Son, S. E. corner Eighth and Vine streets, Philadelphia, Pa.—Finest American dress shirts; also, cricket, club, fire, base-ball, yachting, and society shirts. F 69. 250
- 844a Meyer, Jonasson, & Co., New York, N. Y.—Felt skirts. F 78. 250
- 845 Butterick, E., & Co., New York, N. Y.—Paper patterns for ladies' and children's garments. H 70. 250
- 846 Maize & Schwartz, Philadelphia, Pa.—Military uniforms. C 78. 250
- 847 Chapman, Mrs. Dr. H. M., 219 South Eighth, and 336 South Fifth street, Philadelphia, Pa.—Patent skirt supporting, shoulder brace, puff corset. Requires no padding; allows the form its natural shape without pressure. F 69. 250
- 847a Wyoming Valley Knitting Co., Pittston, Pa.—Hosiery and underwear. F 73. 250
- 848 Cooper, Henry Prouse, New York, N. Y.—Clothing. F 72. 250
- 849 Schuyler, Hartley, & Graham, New York, N. Y.—Military and naval equipments, society and theatrical goods. F 70. 250
- 849a Moeller, C. H., St. Louis, Mo.—Netted underwear. F 71. 250
- 850 Glasier, J. J., Bro. & Co., Philadelphia, Pa.—Brown, bleached, and colored hose and half hose. F 72. 250
- 850a Fall River Merino Co., Fall River, Mass.—Ladies' and men's underwear. F 73. 250

## Clothing, Ornaments.

- 851** Judson Bros., New York, N. Y.—Shirts, underwear, drawers. F 70. 250
- 851a** Weldcn, Dana, & Co., San Francisco, Cal.—Stocking supporters, ladies' belts, etc. F 71. 250
- 852** Thalheimer & Hirsch, Philadelphia, Pa.—Gentlemen's white and fancy shirts, underwear, collars, and cuffs. F 61. 250
- 852a** Dudley Hosiery Co., Newton Lower Falls, Mass.—Knit underwear, hosiery. F 73. 250
- 853** Michaelis & Kaskel, 653 Broadway, New York, N. Y.—Shirts, underwear, and pajamas; anti-rheumatic flannels, and embroideries. Manufacturers of the finest dress shirts and underwear, to order only; embroiderers, and importers of gentlemen's furnishing goods; depot for Dent's London-made kid gloves, Cartwright and Warner's merino underwear, and Martin's umbrellas; sole agents in the United States for Lairitz's celebrated anti-rheumatic flannels and medicinal preparations. Office, during the exhibition, at the Transcontinental Hotel, opposite the Main Building. F 67. 250
- 853a** Leighton, Chas., New Orleans, La.—Shirt. F 71. 250
- 854** Harvey & Baird, Philadelphia, Pa.—Shirts. F 72. 250
- 854a** Eager, P. B., Tower, & Co., Boston, Mass.—C 78. 250  
a Oiled clothing. 250  
b Oiled hats. 251
- 855** Griswold, Catherine A., New York, N. Y.—Corsets. F 69. 250
- 856** Devlin & Co., Clothiers, Broadway, corner Grand street; Broadway, corner Warren street, New York, N. Y.—Military uniforms, for army, navy, and national guard; gentlemen's dress and business suits; duck vests, robes-de-chambre, breakfast jackets, and shirts; also, boys' and youths' clothing. F 67. 250
- 856a** Hemple, J. C., Baltimore, Md.—Rubber cloth diaper. F 72. 250
- 857** Prindle, G. H., Philadelphia, Pa.—Muffs and boas, caps, cloaks, afghans, capes, hoods, designs for bed spreads. F 73. 250
- 857a** Thudium, C. A., & Son, Philadelphia, Pa.—Woolen and worsted cardigan jackets. B 79. 250
- 858** Moore, George, New York, N. Y.—Bias and bias neck cutter. H 71. 250
- 858a** Bishop & Northrup, Wyandotte, Mich.—Wool dusters. F 71. 250
- 859** Thomas, A. W., Philadelphia, Pa.—Bustle, skirt elevator, bosom form. F 70. 250
- 859a** Jacobs, Strouse, & Co., New York, N. Y.—Corset clasps and busks. T 63. 250
- 860** Rosenbach & Co., Philadelphia, Pa.—Shirts, pantaloons, overalls, drawers. F 68. 250
- 860a** Schoenhof, J., & Co., New York, N. Y.—Skirts in embossed and trimmed effects. F 70. 250
- 861** Conrad Bros., Philadelphia, Pa.—Shirts, collars, cuffs, etc. F 67. 250
- 862** National Suspender Co., New York, N. Y.—Shoulder braces and suspenders. F 68. 250
- 862a** Oliver, Thomas, New York, N. Y.—Transfer for measuring and cutting coats. F 68. 250
- 863** Cohn, M., & Co., Novelty Corset Works, New York, N. Y.—Woven corsets. F 69. 250
- 864** Piqua Woolen Mills, Piqua, O.—Jackets and woolen socks. B 75. 250
- 865** Taylor, S. T., New York, N. Y.—System of dressmaking, bias cutter, fashion journals. F 71. 250
- 866** Hopkins, W. T., Philadelphia, Pa.—Ladies' and children's undergarments, infants' dresses, hoop skirts, corsets, panniers, bustles. F 69. 250
- 867** Horstmann, Wm. H., & Sons, Philadelphia, Pa.—Military and theatrical goods. Military, society, regalia, church, and theatrical goods; flags, banners, bunting, army, navy, national guard, and band equipments, in great variety; regalia, jewels, and properties for Masonic Blue lodges, chapters, commanderies, Scottish Rite, and other societies; Knights Templar uniforms a specialty. A full line of materials and trimmings suited to all the above lines. H 73. 250
- 868** Demorest, Mme., New York, N. Y.—Fashion patterns and bulletin, dress-cutting system, corsets, shoulder brace, skirt and stocking suspenders. F 68. 250
- 869** Nashawannuch Manufacturing Co., Easthampton, Mass.; factories, Easthampton, Mass.; salesrooms, 74 and 76 Worth street, New York.—Elastic rubber suspenders and webs. Manufacturers of elastic suspenders, frills, and webs, in silk, worsted, and cotton; new styles, plain and figured, in great variety, constantly produced. This company successfully introduced in this country "Goodyear's" patent vulcanized rubber, in woven elastic goods, and continues its use very extensively. F 67. 250
- 871** Thompson, E. O., merchant tailoring, 908 Walnut street, Philadelphia, Pa.—Clothing. Exemplification of mechanical and artistic tailoring is displayed in these garments, made to order for competition, designed, also, to illustrate characteristic national workmanship, in their embellishment, by trimmings made of the national colors and coins; also particular merit is claimed for the perfect fitting pantaloons, cut according to the process patented by the exhibitor. F 71. 250
- 872** Sternberger, L. & S., Philadelphia, Pa.—White shirts. Manufacturers of the "Eclipse" fine white shirts; shirt fronts, drawers, overalls, etc. F 68. 250
- 873** Norfolk & New Brunswick Hosiery Co., New Brunswick, N. J.—Ladies', gentlemen's, and children's knitted underwear; shirts, vests, pants, and drawers; ladies' and misses' union dresses, gentlemen's and boys' merino wool half hose; ladies' and misses' merino and wool hose and three-quarter socks, in various colors. We manufacture only full fashioned or regular made goods of fine qualities. H. J. Libby & Co., agents, No. 37 White street, New York. F 70. 250

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26

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- 874 Warner Bros., New York, N. Y.  
—Corset and skirt supporter, corset waist.  
F 70. 250
- 875 Bowers, Jas., & Co., Newark,  
N. J.—Sewed corsets and rivetless corset  
clasps. F 69. 250
- 876 Alkinson, Henry, Philadelphia,  
Pa.—White shirts, buckskin shirts, and  
drawers. F 70. 250
- 877 Zäuner, Henry, Philadelphia,  
Pa.—Lace, silk, and mesh caps, hand knit  
and crochet sephyr goods, for infants. F  
72. 250
- 878 Borm, L., Philadelphia, Pa.—  
Dress suit. F 69. 250
- 880 Wilson, J. H., Philadelphia, Pa.  
—Military goods. F 70. 250
- 881 Foy & Harmon, New Haven,  
Conn.—Skirt-supporting corset. F 69. 250
- 882 America Hosiery Co., New Brit-  
ain, Conn.—Wool, merino, and cotton un-  
derwear, hosiery. F 68. 250
- 883 Worcester Corset Co., Worces-  
ter, Mass.—Corsets, corset and skirt sup-  
porters. F 69. 250
- 884 Boston Comfort Corset Co., Bos-  
ton, Mass.—Corset without bones. F  
69. 250
- 885 Palmer & Williams, Boston,  
Mass.—Jacqueline corsets and misses'  
waists. F 69. 250
- 886 Danham, T. M., & Brother, New  
Bedford, Mass.—White laundered shirts  
and shirt bosoms. F 68. 250
- 887 Rockhill & Wilson, Philadelphia,  
Pa.—Clothing. F 69. 250
- 888 Lowell Hosiery Co., Lowell,  
Mass.—Women's plain cotton hose. F  
69. 250
- 889 Wanamaker & Brown, Philadel-  
phia, Pa.—Gentlemen's, youths', and  
children's ready-made clothing; gentle-  
men's furnishing goods. B 67. 250
- 890 Wanamaker, John, & Co., Phila-  
delphia, Pa.—Ancient and modern cloth-  
ing worn by American gentlemen during  
the past century. F 67. 250
- 893 Cummings, J. S., & Co., Phila-  
delphia, Pa.—Scarfs, cravats, stocks,  
bows, and neck wear. F 68. 250
- 893 Hughes, Thos., & Co., Bristol,  
Pa.—Cotton, merino, and wool hosiery. F  
72. 250
- 894 Strahan, Hodgson, & Co., New  
York, N. Y.—Linen collars and cuffs. F  
72. 250
- 895 American Suspender Co., Water-  
bury, Conn.—Webbing frills and suspend-  
ers. F 68. 250
- 896 Brewster Bros. & Co., Birming-  
ham, Conn.—Corsets, combined corset  
and skirt supporters, corset clasps. F  
69. 250
- 897 Gabriel, Henry, & Sons, Allen-  
town, Pa.—Knitted woolen and cotton ho-  
siery. F 68. 250
- 898 American Molded Collar Co.,  
Boston, Mass.—Combined cloth and pa-  
per collars. These collars are well known  
for their complete shape to the neck. The  
collars and cuffs have a pure starch finish,  
and are suitable for any gentleman to  
wear, always being of the latest fashion.  
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collar is made to fit the neck perfectly and  
easily, is controlled exclusively by this  
company. These goods have been  
awarded the first prize at several expo-  
sitions. F 70. 250
- 899 Frost, Geo., & Co., Boston, Mass.  
—Corsets, waists, hose supporters, emanci-  
pation suit, and under-flannel. F 70. 250
- 900 Sweet, Orr, & Co., factory, Wap-  
pinger's Falls, N. Y.; office, 345 Broad-  
way, New York City.—Orr's pantaloons,  
overalls, and engineer jackets. The pe-  
culiar cut of these overalls must be  
noticed, by which such seat-room is given  
that the wearer feels perfect ease, in all  
positions; no binding or straining in any  
part; their strength is such that they  
are "warranted never to rip." F 76. 250
- 901 Bickford, Dana, New York, N. Y.  
—Knitted articles made on Dana Bick-  
ford's knitting machines. F 68. 250
- 902 Beatty Hosiery Mills, Philadel-  
phia, Pa.—Hosiery. F 73. 250
- 903 Landenberger's, Martin, Sons,  
Philadelphia, Pa.—Hosiery and knit  
goods. F 67. 250
- 904 United States Corset Co., New  
York, N. Y.—Corsets. B 71. 250
- 905 Sharpless & Sons, Philadelphia,  
Pa.—Ladies' costumes. B 68. 250
- 906 Rothschild Bros. & Gutman, New  
York, N. Y.—Shirts, drawers, and under-  
shirts. F 69. 250
- 907 Cameron, Wm., & Son, Philadel-  
phia, Pa.—Embroidering, braiding, and  
stamping designs; children's clothing, in-  
delible ink marking. F 70. 250
- 908 Dress Reform Co., Boston, Mass.  
—Dress reform clothing. F 71. 250
- 909 Otis Co., Ware, Mass.—Hosiery  
and underwear. N 75. 250
- 910 Hayden, James, Philadelphia,  
Pa.—Shirts, drawers, and necktie shields.  
F 72. 250
- 911 Peck & Greene, Brooklyn, N. Y.  
—Worsted and silk goods for theatrical,  
boating, and general underwear. B 75. 250
- 912 Star Knitting Co., Cohoes, N. Y.  
—Cotton, woolen, and merino shirts,  
drawers, pantalets, and union suits. F  
67. 250
- 913 Parsons, J. H., & Co., Cohoes, N.  
Y.—Woolen, merino, and cotton shirts;  
drawers, pantalets, and union suits. F  
67. 250
- 914 Brookside Hosiery Mills, Troy,  
N. Y.—Cotton, woolen, and merino shirts;  
drawers, pantalets, and union suits. F  
67. 250
- 915 McDonnell, Kline, & Co., Amster-  
dam, N. Y.—Cotton, woolen, and merino  
shirts; drawers, pantalets, and union suits.  
F 67. 250
- 916 Bennett, E., Brooklyn, N. Y.—  
Shirts. F 68. 250
- 917 Coon & Van Volkenburgh, Troy,  
N. Y.—Men's linen collars and cuffs. F  
67. 250
- 918 Ellis Manufacturing Co., Walth-  
am, Mass.—Stocking supporters. N  
71. 250

## Clothing, Ornaments, Jewelry.

- 919 Homer, Colladay & Co., Philadelphia, Pa.—F 71.  
 a Ladies' dresses, trousseaux, neck-ties, scarfs, and furnishing goods. 250  
 b Embroidery, lingerie. 252  
 All articles contained in this exhibit are of H., C. & Co.'s own manufacture, and at their extensive establishment, Nos. 14 2 and 1414 Chestnut street, above Broad street, Philadelphia, will be found goods of a similar character, in great variety.
- 920 Pettingell & Sawyer, East Cambridge, Mass.—F 76.  
 a Waterproof oil clothes. 250  
 b Waterproof hats. 251
- 920a Brady, Edward, Philadelphia, Pa.—U 63.  
 a Collars for men's wear. 250  
 b Buttons. 254
- 921 Carney, Bernard L., Philadelphia, Pa.—Silk, beaver, and felt hats. B 70. 251
- 922 Jacoby, Theo., Philadelphia, Pa.—Hats, bonnets with domestic trimmings. F 70. 251
- 923 Hegle, Fortuné, New York, N. Y.—Material for kid glove manufacturing, and kid gloves. B 68. 251
- 924 Stetson, John B., & Co., Philadelphia, Pa.—Soft and stiff felt hats in various stages of manufacture. B 68. 251
- 925 Walton, Maison, New York, N. Y.—Bonnets and round hats. F 71. 251
- 926 Littleton Saranac Buck Glove Co., Boston, Mass.—Grain tanned gloves. B 69. 251
- 927 New York Catholic Protectory, New York, N. Y.—Shoes. V 53. 217
- 928 Brown, Emma, New York, N. Y.—Straw round hats and feathers. B 70. 251
- 929 Nonnenberger, Christian, Philadelphia, Pa.—Hatters' blocks and tools. B 69. 251
- 930 Fenton, J. H., & Bro., Philadelphia, Pa.—Gentlemen's dress, silk, soft and stiff felt, and other hats. B 70. 251
- 931 Pierson & Herman, Newark, N. J.—Hat blocks and flanges, hatters' tools. B 70. 251
- 932 Yates, Wharton, & Co., Newark, N. J.—Fur felt hats. B 70. 251
- 933 Field, J. C. & J. F., Philadelphia, Pa.—Gloves. B 69. 251
- 934 Hays, Daniel, Gloversville, N. Y.—Buckskin and peccary skin gloves, gauntlets, and mittens. B 71. 251
- 934a Blaylock & Co., Philadelphia, Pa.—B 71.  
 a Straw hats; hats. 251  
 b Furs, robes, fur caps, turbans, gloves, etc. 256
- 935 Jeannisson, Lewis, & Son, Johnstown, N. Y.—Gloves. B 71. 251
- 937 Haverhill Hat Co., Haverhill, Mass.—Wool hats. B 69. 251
- 938 Solmans, Alden, South Norwalk, Conn.—Felt hats. B 71. 251
- 939 Morris, E., & Co., Philadelphia, Pa.—Silk, soft, and stiff hats. B 67. 251
- 940 Amidon's Son, T. H., New York, N. Y.—Hats and caps. B 70. 251
- 941 Dunlap & Co., Hatters, 174 Fifth avenue and 589 Broadway, New York, N. Y.; manufactory and wholesale department, 161 Mercer street, New York, N. Y.—Gentlemen's silk, felt, straw and opera hats; ladies' riding hats. B 70. 251
- 942 Kennedy, Thos., & Bro., Philadelphia, Pa.—Wax figure in bridal costume; trimmed bonnets and hats. F 72. 251
- 943 Schiller, Jos., & Co., St. Louis, Mo.—Hats for gentlemen's wear. B 69. 251
- 945 Hutchinson, John C., Johnstown, N. Y.—Men's lined dogskin, calfskin, and lambskin gloves and gauntlets. B 71. 251
- 946 Northrup, W. S. & M. S., & Co., Johnstown, N. Y.—Fine lamb, real calf, and buckskin castor unlined gloves. Most glove dealers know the reliability of gloves made by this firm. B 71. 251
- 947 Colwell, F. E., & Co., Chicago, Ill.—Husking gloves. P 51. 251
- 948 Miller, Geo. F., Jacksonville, Fla.—B 74.  
 a Palmetto hats. 251  
 b Florida curiosities. 254
- 949 Bancroft, J. S., & Co., New York, N. Y.—Hats and caps, boys' and children's hats. B 72. 251
- 950 Kirschmidt & Co., 190 to 194 South Fifth avenue, New York, N. Y.—Standard manufacturers—Embroideries, puffings, plaitings, and flutings, made on patented machines; ladies' collars and cuffs, ties, collarettes, lock-stitch all-over tuckings, and tucked frockings. F 69. 252
- 950a Beatty & Thorne, New York, N. Y.—Hat, badge, and ornamental printing in gold, silver, etc. P 78. 252
- 951 Bentley, Jeff. O., Philadelphia, Pa.—Embroidered, braided, and stamped goods; indelible marking, designs, stamps. F 72. 252
- 951a Roberts & Hevell, Newark, N. J.—T 65.  
 a Dress, hat, and shoe trimmings. 252  
 b Metal fancy goods, notions. 254  
 c Trunk and bag trimmings. 255
- 952 Barrett, Jos. W., Philadelphia, Pa.—Embroidery and braiding designs, hand worked and printed. F 72. 252
- 953 Thomas, Joel, Philadelphia, Pa.—Ruches, ladies' and infants' caps, rufflings, and collarettes. F 71. 252
- 954 Clickerman, L. M., Philadelphia, Pa.—Embroidery on linen cambric. F 68. 252
- 955 Palmer & Kendall, Middletown, Conn.—Mosquito net canopies with attachments, machine-tentered wide fabrics, mosquito nettings, cords, and window lines. F 77. 252
- 956 Bedichimer, Isaac, Philadelphia, Pa.—Masonic marks, society jewels, pins, and emblems in gold and silver. N 43. 253
- 956a Barrows, H. F., & Co., New York, N. Y.—Plated jewelry. P 43. 253
- 957 Muhr's, H., Sons, Philadelphia, Pa.—Gold finger rings. P 43. 253
- 957a Celluloid Novelty Co., New York, N. Y.—Celluloid jewelry. N 43. 253
- 958 Bailey & Co., Philadelphia, Pa.—Jewelry. N 43. 252

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26

## Jewelry, Toys, Fancy Articles.

- 959 Simons, Opdyke, & Co., Philadelphia, Pa.—Gold chains, gold head canes, thimbles, gold and pearl jewelry. P 43. 253
- 960 Caldwell, J. E., & Co., Philadelphia, Pa.—Jewelry and artistic manufactures in the precious metals, for use and decoration. N 41. 253
- 961 Vulcanite Jewelry Co., New York, N. Y.—Vulcanite and jet, and combination vulcanite and jet jewelry. P 43. 253
- 962 Goggin, Jas., New York, N. Y.—Suites of jewelry, and jewel cases of shell, jet, and bog oak. P 50. 253
- 963 Neher, Chas., Philadelphia, Pa.—Hair jewelry. P 43. 253
- 964 Starr & Marcus, New York, N. Y.—Diamonds, pearls, precious stones, rich jewels, and stone cameos. N 41. 253
- 965 Morgan & Headly, Philadelphia, Pa.—Gold spectacles and chains, fine jewelry. N 42. 253
- 966 Cottier, C., & Son, N. Y.—Imitation of precious stones and fancy cut stones. P 44. 253
- 967 Tillinghast, Mason & Co., Providence, R. I.—Imitation diamond jewelry. N 43. 253
- 968 Richards, J. J. & J. M., New York, N. Y.—Sleeve and collar buttons, studs, crosses, pins, and cardrops. P 43. 253
- 969 Haas, Jas. A., & Co., Philadelphia, Pa.—Jewelry; masonic and other emblems. N 43. 253
- 970 Hamilton P. Hunt, Providence, R. I.—Plated chains and buckle bracelets. P 43. 253
- 971 Kipling's, R., Sons, New York, N. Y.—Precious and imitation stones for jewelry. N 43. 253
- 972 Tiffany & Co., New York, N. Y.—N 41. 253  
a Jewelry, precious stones. 253  
b Gilt goods. 254
- 973 Robbins, Clark & Biddle, Philadelphia, Pa.—N 43. 253  
a Jewelry, diamonds. 253  
b Bronzes, fancy goods. 254
- 973a Sand, M., New York, N. Y.—Wax flowers. F 71. 254
- 974 Miller, Thos., New York, N. Y.—Silk umbrellas. B 70. 254
- 975 Pope Manufacturing Co., Boston, Mass.—Rifle air pistol for target shooting. H 71. 254
- 976a Oakville Company, Waterbury, Conn.—Shawl, bankers', and mixed pins; toilet pin rolls. H 68. 254
- 976b Galena Oil Works (limited), Franklin, Pa.—Silver card baskets and cards. P 47. 254
- 976 Wallace & Keller, Philadelphia, Pa.—Walking canes, bell earrings, and fancy articles. B 72. 254
- 976a Pratt, D. G., Cambridgeport, Mass.—Wood and ivory turned goods. N 57. 254
- 977 Birgé & Berg, Philadelphia, Pa.—Artificial flowers; picture of lion, made of flowers. F 72. 254
- 978 Glendenning & Truitt, Philadelphia, Pa.—Whips. B 71. 254
- 978a New York Button Co., New York, N. Y.—Silk, velvet, metal, and other buttons. B 71. 254
- 979 Lacmann, J., & Sons, Philadelphia, Pa.—Doll bodies. F 72. 254
- 979a Weintraub, Paul, Philadelphia, Pa.—Fancy articles of olive wood from Jerusalem. T 54. 254
- 980 Pilling, George P., Philadelphia, Pa.—Gold, silver, and plated masonic, odd fellows, and society jewels, marks, emblems, and other small silver wares. N 58. 254
- 981 Baeder, Adamson, & Co., Philadelphia, Pa.—Cowhide whips. N 68. 254
- 981a Bene, Creighton, & Co., New York, N. Y.—Feathers. H 76. 254
- 982 Wilson, John, Philadelphia, Pa.—Carved walking canes. B 69. 254
- 983 Hirsh & Brother, Philadelphia, Pa.—Umbrellas, parasols, and materials. B 72. 254
- 983a Bacon, George W., Philadelphia, Pa.—Artistic transfers in spermaceti. N 55. 254
- 984 Galbraith, Alex., Philadelphia, Pa.—Wax flowers and materials. F 71. 254
- 984a Dudley, Dana, Philadelphia, Pa.—Toy gyroscopes. F 71. 254
- 985 Watson, Brock, Philadelphia, Pa.—Fancy articles carved from nuts and fruit stones; wood relics. H 69. 254
- 986 Potter, W. K., Providence, R. I.—Tortoise shell goods, combs, jewelry, etc. P 43. 254
- 986a Shoenhof, J., & Co., New York, N. Y.—Felt skirts. F 71. 254
- 987 Nickle, Robt., Rochester, N. Y.—Magical apparatus and toys. H 78. 254
- 987a Goodwin, W. C., New Haven, Conn.—Hot-air toys, guns, games, novelties, recording bank. N 71. 254
- 988 Bloodgood, Miss A. De Etta, New York, N. Y.—Sheet wax, wax flowers, leaves, shells, fruit, etc.; illuminated and rustic crosses. P 43. 254
- 988a Noyes, W. F., Newburyport, Mass.—Combs. F 71. 254
- 989 Chambers & Co., Philadelphia, Pa.—Umbrellas, parasols, and sun umbrellas. B 72. 254
- 989a Leighton, Charles, New Orleans, La.—Sleeve buttons mounted with Long Branch pebbles. F 71. 254
- 990 Johnson, E. S., New York, N. Y.—Tooth picks and ear spoons. N 43. 254
- 990a Jackson, Samuel C., New York, N. Y.—Silverware and jewelry trays and cases, fancy wood boxes. N 43. 254
- 992 Wahi, Emil, Philadelphia, Pa.—Fancy bone work, dominoes, chessmen, crochet needles, buttons, jewelry, etc. N 43. 254
- 993 India Rubber Comb Co., New York, N. Y.—Hardware rubber combs, syringes, drinking flasks; surgical, telegraphic, and photographic goods, etc. Manufacturers of hard rubber combs, syringes, drinking flasks, whip sockets, inkstands, oilers, thimbles, doll-heads, martingale rings, tumblers, rulers, funnels, scoops, dice cups, soap trays,

## Ornaments, Toys, Fancy Articles.

- castor rolls, napkin rings, whip handles, salad spoons and forks, gas faucets, mustard spoons; photographic, telegraphic, electrical, and surgical goods, and all kinds of special goods; sheet, rod, and tubing. B 67. 254
- 994 Leiner, Moritz, New York, N. Y.—Ear cleaners, filtering racks, sponge baskets, bath and bottle brushes, probangs. P 65. 254
- 995 Aiken, Lambert, & Co., New York, N. Y.—Toothpicks. N 43. 254
- 996 Koch, Sons, & Co., New York, N. Y.—Albums and backgammon boards. P 76. 254
- 997 Birch, John S., New York, N. Y.—Watch key that will wind any watch. P 43. 254
- 998 Ellis, Knapp, & Co., New York, N. Y.—Umbrellas and parasols. B 70. 254
- 998a Feust & Rice, New York, N. Y.—Toys, jardiniers, and parlor ornaments. P 51. 254
- 999 Drown, W. A., & Co., Philadelphia, Pa.—Umbrellas and parasols. B 69. 254
- 999a Buffalo Decorating Co., Buffalo, N. Y.—Artificial ivy and autumn leaves. P 62. 254
- 1000 Hopkins & Robinson Manufacturing Co., Akron, O.—Smoking pipes. T 44. 254
- 1000a Smithers, Mrs. G. H., New York, N. Y.—Wax flowers and figures; sheet wax. F 70. 254
- 1001 Orange Judd Co., New York, N. Y.—Crandall's building blocks. T 73. 254
- 1003 Dickinson, Mrs. C. J., Chicago, Ill.—Wax flowers, leaves, fruit, ferns, etc. P 42. 254
- 1004 Tobin, Joseph F., No. 82 Duane street, New York, N. Y.—Whalebone goods. Manufacturer of dress, corset, whip, cane, probe, busks, brush, ribbon, round and half-round bone. F 72. 254
- 1005 Mable, Todd, & Bard, New York, N. Y.—Tooth-picks. N 43. 254
- 1007 Riley & Lynch, Newark, N. J.—Bag and umbrella trimmings, military metal goods, masonic ornaments, etc. H 67. 254
- 1008 Celluloid Manufacturing Co., Newark, N. J.—Toilet brushes, etc., made from celluloid. N 43. 254
- 1009 American Mechanical Toy Co., N. Y.—Mechanical toys. F 70. 254
- 1010 Leonhard, Theo., Paterson, N. J.—Pure white beeswax bleached by sun, wax tapers or gaslighters, sheet wax and gilded brass moulds for wax flowers. N 56. 254
- 1011 Bradley & Hubbard Manufacturing Co., West Meriden, Conn.—Bronzes, call bells. N 47. 254
- 1013 Carlisle, Henry, & Son, Philadelphia, Pa.—Tortoise shell and horn combs, jewelry sets, and fancy articles. N 52. 254
- 1014 Althof, Bergmann, & Co., New York, N. Y.—Tin and mechanical toys. F 76. 254
- 1016 Bickel, August, & Son, Philadelphia, Pa.—Canes. B 71. 254
- 1017 Heister & Gans, New York, N. Y.—Automatic umbrellas and parasols. B 69. 254
- 1018 Kaldenberg, Fred. Julius, New York, N. Y.—Genuine meerschaum pipes and cigar holders, amber goods. P 66. 254
- 1019 Holland, John, Cincinnati, O.—Toothpicks. N 43. 254
- 1020 Adams, J. S., & Co., Providence, R. I.—Tortoise shell jewelry and combs. N 42. 254
- 1021 Demuth, Wm., & Co., New York, N. Y.—Pipes and smokers' articles. P 69. 254
- 1022 Wagan, R. M., Mount Lebanon, N. Y.—Fancy articles made by the Shalwa. P 52. 254
- 1023 Stehr, Carl, New York, N. Y.—Meerschaum and amber goods. B 72. 254
- 1024 Harvey & Ford, Philadelphia, Pa.—Canes, umbrella and whip handles; pipes, billiard balls; pearl, horn, and ivory work. B 70. 254
- 1025 Waterbury Button Co., Waterbury, Conn.—Army, navy, railroad, police, state, livery, and cloth buttons; ladies' belt buckles, medals, and badges. B 76. 254
- 1027 Armstrong, F., Bridgeport, Conn.—Duplex ventilated garters and armlets. F 72. 254
- 1028 Field, A., & Sons, Taunton, Mass.—Buttons and eyeclets. P 68. 254
- 1029 Lewy, F., New York, N. Y.—Kid glove safe. E 78. 254
- 1030 Matthias, Mrs. C. E., Philadelphia, Pa.—Umbrellas and parasols. F 70. 254
- 1031 Mitchell, Vance, & Co., New York, N. Y.—Bronzes. N 49. 254
- 1031a Griffin, A. B., Ravenna, O.—Box and pyramid made of the woods of the world, containing 9865 pieces. P 49. 254
- 1032 Independent Comb Co., Wappinger's Falls, N. Y.—Ladies' horn and rubber combs, dressing combs, pipe stems, and bits. B 73. 254
- 1033 Barnhurst & Robinson, Philadelphia, Pa.—Umbrella and parasol stretchers. B 70. 254
- 1034 Grottenthaler, V., Philadelphia, Pa.—Block for wood engravers, wooden smoking pipes. B 70. 254
- 1035 Ives, Blakeslee, & Co., Bridgeport, Conn.—Mechanical toys and novelties. F 72. 254
- 1036 Maine Manufacturing Co., New York, N. Y.—Dice box. N 65. 254
- 1037 Nax, Kuhn, & Silberman, Philadelphia, Pa.—Tobacco pipes; umbrella, parasol handles, cigar tubes, etc. B 75. 254
- 1038 National Button Co., Easthampton, Mass.—Cloth-covered and vegetable-ivory buttons, in great variety. Wiliston, Knight & Co., selling agents, Nos. 74 and 76 Worth street, New York, who sell by the case or package only. B 76. 254

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Fancy Articles, Traveling Equipments, Stationery.

- 1039 Spaulding, D. S., Mansfield, Mass.—Tortoise shell jewelry, back combs, and fancy goods. N 43. 254
- 1040 Sevey, J. A., Boston, Mass.—Articles of whalebone, for whips, canes, corsets, dresses, etc. F 71. 254
- 1041 Eureka Manufacturing Co., Boston, Mass.—Air pistols. H 71. 254
- 1042 Joslin, Palmer, & William, New York, N. Y.—Horn and rubber goods, fancy back combs, and jewelry. N 43. 254
- 1043 Hildreth, Milo, & Co., Northboro', Mass.—Horn and tortoise shell combs and jewelry. N 43. 254
- 1044 Mahn, L. H., Jamaica Plain, Mass.—Base balls. F 71. 254
- 1047 Porter Brothers & Co., New York, N. Y.—Buttons and presses for attaching the same. H 71. 254
- 1047a Holland, J. C., New York, N. Y.—Needles. F 71. 254
- 1048 Harris, S., & Sons Manufacturing Co., Clinton, Mass.—Dressing and fancy combs, imitation jet and shell chains. F 71. 254
- 1049 Wild, G. L., & Brother, Washington, D. C.—Musical dancing toy attachment for pianos. N 64. 254
- 1050 Moutoux, Emil W., New York, N. Y.—Hair pictures and devices for breastpins. P 52. 254
- 1051 Grote, F., & Co., New York, N. Y.—Carved and turned ivory; pearl and shell goods. B 71. 254
- 1051a Conrad, Wm. C., Middletown, Pa.—Cane. T 61. 254
- 1052 Ansley, Fred. W., St. Augustine, Fla.—Jewelry made from native Florida material. H 68. 254
- 1053 Fowler Fly Fan Co., Philadelphia, Pa.—Fly fan moved by clockwork. N 54. 254
- 1054 Platt Bros. & Co., Waterbury, Conn.—Buttons. H 71. 254
- 1055 Cheshire Manufacturing Co., West Cheshire, Conn.—Buttons. H 71. 254
- 1056 Godfrey, C. J., & Son, Naugatuck, Conn.—Thimbles. H 71. 254
- 1057 Comstock Dickinson Ivory Co., Center Brook, Conn.—Ivory fine combs. H 71. 254
- 1058 Blake & Johnson, Waterbury, Conn.—Satin finish hair pins. H 71. 254
- 1059 Ives, Blakeslee, & Co., Bridgeport, Conn.—Silk covered ventilated metallic garters. H 71. 254
- 1059a Ladd, S. J., Providence, R. I.—Gold thumbless. N 43. 254
- 1060 Peacock, H. H., Philadelphia, Pa.—Fancy cases in morocco, velvet, and marqueterie, for jewelry, etc.; physicians' cases. P 63. 255
- 1060a Turner, Andrews & Co., Philadelphia, Pa.—Pocket and bill books, letter cases, and fancy leather articles. F 72. 255
- 1061 Rumpp, Chas., Philadelphia, Pa.—Fancy leather goods, dressing case, work boxes, pocketbooks, satchels, etc. H 69. 255
- 1061a Langfeld, J., & Sons, Philadelphia, Pa.—Pocketbooks, satchels, and fancy leather articles. F 70. 255
- 1062 Kolb, G. F., & Son, Philadelphia, Pa.—Cases for jewelry and silverware. B 71. 255
- 1062a Arms Manufacturing Co., Northampton, Mass.—Pocketbooks, photograph cases, chess boards, etc. B 78. 255
- 1063 Rumpp, C. F., 116 & 118 North Fourth St., Philadelphia, Pa.—Fancy leather goods, pocketbooks, cigar and match cases, bankers' cases, dressing cases, writing desks, satchels, traveling bags, etc. Any article exhibited is kept in store, and any similar goods will be made to order at short notice. B 68. 255
- 1063a Spitzer, George W., 33 Maiden Lane, New York, N. Y.—Fans, jewelry cases, and fancy leather goods. Manufacturer of leather fancy goods. Our specialties are jewelry cases and fans. These are the only fans of the kind made in this country. B 71. 255
- 1064 Parkhurst & Gridley, Newark, N. J.—Shawl and book strap. P 68. 255
- 1065 Likly, McDonald, & Rockett, Cleveland, Ohio.—Fancy leather work, gun case, etc. B 70. 255
- 1066 Stambach, John A., & Co., Philadelphia, Pa.—Ladies' and gentlemen's furs and robes. B 68. 256
- 1067 Mawson, Ed. S., & Sons, Philadelphia, Pa.—Seal sacques, muffs, caps, gloves; seal, sable, and mink skins, etc. B 68. 256
- 1068 Fishblatt, Lewis, Philadelphia, Pa.—Ladies' furs and carriage robes. B 70. 256
- 1069 Mahler, M., New York, N. Y.—Furs. B 67. 256
- 1070 Reisky, N. C., Philadelphia, Pa.—Ladies' furs, gentlemen's driving goods, sleigh robes, Indian painted buffalo robes. B 69 and 71. 256
- 1071 Booss, F., & Bro., 449 Broadway, New York, N. Y.—Furs, sacques, coats, muffs, boas, caps, robes, gloves, fur trimmings, and skins of all kinds. B 69. 256
- 1075 Kaehler, Otto, Philadelphia, Pa.—Stuffed animals, raw and dressed skins, fur robes, fancy furs, etc. B 68. 256
- 1076 Duryee & Hallett, Rahway, N. J.—Dressed and dyed furs. H 68. 256
- 1077 Burnett, W. H. & R., Newark, N. J.—Furs, fur cloaks, and fur-lined mantles. B 68. 256

## Paper, Blank Books, and Stationery.

- 1078 Dixon Crucible Co., Jersey City, N. J.—Pencils of graphite. P 72. 256
- 1078a Amberg, William A., New York, N. Y.—File and binder. P 77. 258
- 1079 McGill, Geo. W., New York, N. Y.—McGill's patent fasteners for binding papers of all descriptions; sampling for woolen, dry, and fancy goods, and for all descriptions of light binding; McGill's patent suspending rings, and braces for hanging cards, calendars, etc.; one hundred different patterns of fasteners and rings; McGill's patent letter clips, punches, presses, copying press, water cups, etc. Factories at Waterbury, Conn.; warehouses at 49 Chambers street, New York, and 18 Federal street, Boston. P 73. 258

## Stationery.

- 1079<sup>a</sup> Smith, Eldridge J., Philadelphia, Pa.—Bill holder, envelope, and book clasp. H 69. 258
- 1080 Hoskins, W. H., Philadelphia, Pa.—Paper, envelopes, designing, engraving, printing, and lithographing. P 76. 258
- 1080<sup>a</sup> Chamberlin, Whitmore, & Co., New York, N. Y.—Stationery. P 74. 258
- 1081 Woodruff, E. W., Washington, D. C.—File holders, for filing business and official papers, compactly and conveniently for reference. Adopted by the United States Government. P 49. 258
- 1082 Tiffany & Co., New York, N. Y.—Stationery. N 41. 258
- 1082<sup>a</sup> Pottin Register Manufacturing Co., Philadelphia, Pa.—Bank check. P 57. 258
- 1083 Goldsborough, John, Philadelphia, Pa.—Ribbon machine and hand stamps, perforating and canceling stamps. P 77. 258
- 1084 American Lead Pencil Co., New York, N. Y.—Lead pencils, materials, and process of manufacture. P 74. 258
- 1085 Fairchild, Leroy W., & Co., New York, N. Y.—Gold pens, pencil and pen cases, toothpicks and desk holders of gold and silver, etc. Awarded highest premium at Paris, 1867; Vienna, 1873; and gold and silver medals from other fairs wherever in competition. N 43. 258
- 1086 Faber, Eberhard, New York, N. Y.—Lead pencils, penholders, rubber goods, and stationers' articles. P 73. 258
- 1087 Cooke, G. K., & Co., New York, N. Y.—Revolving hand stamps, seal presses, rubber stereotypes, check protectors, combined pad and rack. P 77. 258
- 1088 Johnson, E. S., New York, N. Y.—Gold pens, pencils, and cases. N 43. 258
- 1089 Muller's, Nicholas, Sons, New York, N. Y.—Bronze stationery ware, inkstands. P 76. 258
- 1090 Janentsky & Co., Philadelphia, Pa.—Artists' materials, oil colors, water colors, paint boxes, artists' canvas, adjustable drawing table, artists' brush and color stand, sketching easels, and other articles appertaining to the fine arts, all of our own manufacture. P 77. 258
- 1091 Bergner, Theo., Philadelphia, Pa.—Drawing boards, parallel rulers, and section liners for draughtsmen's use. P 76. 258
- 1092 Hawkes, Geo. F., New York, N. Y.—Gold pens, gold, silver, pearl, and rubber pencils; fountain pen. N 43. 258
- 1093 Lipman, Hymen L., Philadelphia, Pa.—Eyelet machines, combining punch and riveter. P 74. 258
- 1094 Brower Bros., New York, N. Y.—Inkstands, paper weights, sponge cups, letter files, etc. P 74. 258
- 1095 Aiken, Lambert, & Co., 12 Maiden Lane, New York, N. Y.—Choice gold pens, penholders, cases. All goods sold guaranteed of same excellency as those on exhibition. N 43. 258
- 1096 Buck, T. S., & Co., Davenport, Ia.—Rubber type forms, rubber dating stamp. P 77. 258
- 1097 Stiles, Mrs. E. W., Philadelphia, Pa.—Book paper-file, revolving inkstand. P 30. 258
- 1098 Youngs, Wm. J., & Sons, Philadelphia, Pa.—Hand stamp. N 57. 258
- 1099 Stoddard, Richard T., Boston, Mass.—Book supporter. P 74. 258
- 1100 Young, W. A., Jacksonville, Fla.—Pencil sharpeners. H 68. 258
- 1101 Bender & Phillips, Hohokus, N. J.—Sheet wax. N 56. 258
- 1102 Mabie, Todd, & Bard, New York, N. Y.—Gold pens, cases, pencils, holders. N 43. 258
- 1103 Hall, P. W., Austin, Texas.—Postage stamp and ticket holders. N 68. 258
- 1104 Dreka, Louis, Philadelphia, Pa.—Portfolio and stationery. Specimens of steel and copper plate engraving, die sinking, printing, illuminating and designing. All work exhibited executed in our establishment. P 74. 258
- 1105 Parkhurst & Gridley, Newark, N. J.—Stationers' goods. P 68. 258
- 1106 Foley, John, New York, N. Y.—Gold pens, pencils, and penholders. N 43. 258
- 1107 Chase, John S., Union Paste & Sizing Co., 300 Mulberry street, New York, N. Y.—Preserved flour paste, for bookbinders' and general use; Eureka perfumed paste, for office, library, and household. P 77. 258
- 1108 Mason & Co., Philadelphia, Pa.—Engraving, fine stationery, illuminating, stamping, and copper plate printing. P 73. 258
- 1109 Somers, D. M., Greenport, Brooklyn, N. Y.—Penholders. P 72. 258
- 1110 Holland, John, Cincinnati, O.—Gold pens, pencil cases, penholders. N 43. 258
- 1111 United States Soapstone Manufacturing Co., Cincinnati, O.—Soapstone slate pencils, crayons for blackboard or metals, tailors' markers, hair crimpers and curlers, boot powder, shoemakers' blocks, foundry facings; manufacturers of soapstone goods of any description. P 77. 258
- 1112 Hart, Bliven, & Mead Manufacturing Co., New York, N. Y.—Stationery for the desk, paper files, clips, etc. P 70. 258
- 1113 James, Samuel, Philadelphia, Pa.—Artists' rotary color and brush-stand. P 77. 258
- 1114 Chamberlin, Whitmore, & Co., New York, N. Y.—Stationery. P 74. 258
- 1117 Walker, Tucker, & Co., Philadelphia, Pa.—Rubber hand stamps. P 74. 258
- 1118 Esterbrook Steel Pen Co., Camden, N. J.—Pens and penholders. P 72. 258
- 1119 Eagle Pencil Co., New York, N. Y.—Lead and mechanical pencils, copying crayons, penholders, stationery, wood and brass articles. P 76. 258
- 1121 Rowland, Joseph S. C., Philadelphia, Pa.—Canceling ink-pad. T 47. 258

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Stationery.

- 1122 Edsall, D. A., New York, N. Y.—Rubber hand stamps, stereotypes, folding rack pads. P 77. 258
- 1123 Morton, James, New York, N. Y.—Gold pens, gold, celluloid, and pearl pencils and penholders. N 43. 258
- 1124 Donovan, J. W., Detroit, Mich.—Record file covers, classified directory. P 58. 258
- 1125 Koch, Sons, & Co., New York, N. Y.—P 76.  
 a Bankers' cases, portfolios, patent binders, etc. 252  
 b Blank books. 261
- 1126 Moss & Co., Philadelphia, Pa.—P 77.  
 a Stationery. 256  
 b Blank books and printed books. 261
- 1127 Root, R. C., Anthony, & Co., New York, N. Y.—P 74.  
 a Office stationery. 258  
 b Account books, lithographic work. 261
- 1128 Cohen, Chas. J., 26 South Fifth street, Philadelphia, Pa.—P 74.  
 a Everpoint leads for pencil cases. 258  
 b Envelopes, all sizes and qualities. 259  
 c Saisette copying book. 261  
 d Paper boxes. 262
- 1129 Byron, Weston, Dalton, Mass.—Ledger and record paper. Linen, strong, double-sized paper for books, where great strength and long use are required. P 75. 259
- 1129a Stratford, Hoe, & Co., Jersey City, N. J.—P 74.  
 a Tissue paper. 259  
 b Press boards. 262
- 1130 Owen Paper Co., Housatonic, Mass.—First-class linen ledger papers, bond and thin linen papers; tinted wedding royals and folios, plain and patent finished; bristol boards and staple writing papers of all kinds. P 73. 259
- 1130a Brown, L. L., Paper Co., South Adams, Mass.—Ledger and flat papers. P 74. 259
- 1131 Southworth Co., Moline, Ill.—Writing papers. P 75. 259
- 1132 Mount Holly Paper Co., Mount Holly Springs, Pa.—Writing papers. P 73. 259
- 1133 Whiting Paper Co., Holyoke, Mass.—Fine papers. P 77. 259
- 1134 Crescent Mills, Springfield, Mass.—Writing papers. P 74. 259
- 1135 Holyoke Paper Co., Holyoke, Mass.—Writing papers. P 74. 259
- 1136 Carson & Brown Co., Dalton, Mass.—Writing paper. P 74. 259
- 1137 Parsons Paper Co., Holyoke, Mass.—Writing paper. Manufacturers of white and tinted writing and envelope papers, of every description. P 74. 259
- 1138 Crane & Co., Dalton, Mass.—Bond, bank-note, parchment, letter, and note paper. P 74. 259
- 1139 Parker, Joseph, Son, & Co., New Haven, Conn.—Treasury and commercial blotting paper. Treasury blotting paper is well known for its durability and great absorbent quality, cleanliness in its use; grows soft and pliable by exposure, and never hardens on the desk. It will absorb more ink than the same thickness of papers of this class manufactured in the ordinary manner. J. G. Ditman & Co., Philadelphia, agents for Centennial. P 74. 259
- 1140 Campbell, Hall, & Co., New York, N. Y.—Safety paper, for protection from erasures. P 74. 259
- 1142 Tileston & Hollingsworth, Boston, Mass.—Steel plate, chromo, and wood-cut paper. P 77. 259
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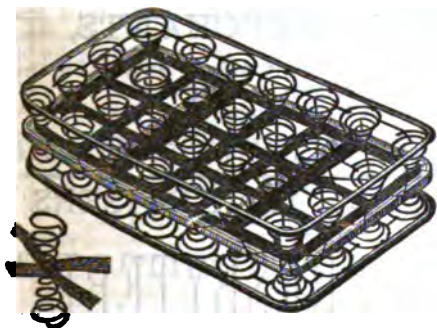
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- 1307 Allen & Johnson, Philadelphia, Pa.—Surgical and mechanical appliances, splints, operating chairs, crutches, supporters, and trusses. N 56. 276
- 1308 Bethell, John P., Philadelphia, Pa.—Surgical and gynecological apparatus; artificial steel leg. N 57. 276
- 1309 Philadelphia Truss Co., Philadelphia, Pa.—Trusses, supporters, shoulder braces, elastic stockings, belts; combination truss and supporter. N 57. 276
- 1310 Gunning, Thomas Brian, 34 East Twenty-first street, New York, N. Y.—Fractured jaw appliances, including Secretary Seward's; illustrating heads; cleft palate appliances; teeth plates; regulating plates. N 51. 276
- 1311 Spillman, Henry, New Orleans, La.—Trusses, supporters, and shoulder braces. N 58. 276
- 1312 Davis, James T., New York, N. Y.—Artificial human eyes. N 54. 276
- 1313 Teufel, J. J., office and factory, No. 103 South Eighth street, Philadelphia, Pa.—N 54. 276  
a Surgical instruments. 276  
b Dental instruments. 277
- 1314 Codman & Shurtleff, Boston, Mass.—N 57. 276  
a Surgical instruments, apparatus and appliances. 276  
b Dental instruments, furniture, and materials; laboratory tools, etc. 277
- 1315 Justi, H. D., Philadelphia, Pa.—Artificial teeth, tools, and materials for their manufacture. N 54. 277
- 1316 Johnson & Lund, Philadelphia, Pa.—Artificial teeth, corundum wheels, gold foil, tooth powders, amalgams, dental instruments and materials. N 59. 277
- 1316a Neve, Edward, Omaha, Neb.—Artificial teeth. N 58. 277
- 1317 Wardle, Thos., Philadelphia, Pa.—Artificial teeth and models. N 58. 277
- 1317a Chapman, John Winslow, Hyannis, Mass.—Artificial teeth. N 58. 277
- 1318 Brown, E. Parmy, Flushing, N. Y.—Gold fillings in human teeth, dentists' cases, dental improvements. N 57. 277
- 1319 White, Samuel S., Philadelphia, Pa.—Artificial teeth, instruments, chairs, dental engines, stools, lathes, brackets, spittoons, gold foils, corundum wheels, etc. N 55. 277
- 1320 White, Chas. A., Philadelphia, Pa.—Celluloid apparatus and dental flasks, process of forming sets of artificial teeth, artificial dentures. N 56. 277
- 1321 Metcalf, David H., Battle Creek, Mich.—Tinman's pattern sheets and squares. N 68. 28c
- 1322 Allen, J., & Son, New York, N. Y.—Artificial dentures. N 57. 277
- 1323 Abbey, Chas., & Sons, Philadelphia, Pa.—Dentists' fine gold foil, soft or non-adhesive and adhesive. Our specialty for fifty years. N 58. 277
- 1324 Bonwill, W. G. A., Philadelphia, Pa.—Electro-magnetic mallet for filling teeth, carving marble, chasing metals, and as an autographic printing press; dental chair and engine. N 59. 277
- 1325 Taylor, J. Hare, Philadelphia, Pa.—Tooth paste, etc. N 57. 277
- 1326 Wardle, S., Cincinnati, O.—Specimens of dentistry. N 58. 277
- 1327 Neall, Daniel W., Camden, N. J.—Porcelain teeth. N 57. 277
- 1329 Crowther, D. W., Hagerstown, Md.—Mechanical and operative dentistry. N 58. 277
- 1330 Scott, Quincy A., Pittsburg, Pa.—Atmospheric disk for holding artificial teeth in the mouth, dental specimens, dentifrice. N 56. 277
- 1331 Ludwig, Schmidt, & Mohl, Houston, Texas.—Enamel; specimens of teeth. N 52. 277
- 1332 Valteau, William, Jr., New York, N. Y.—Gold and silver leaf, gold and platinum filling for dentists' use. N 63. 277
- 1334 Cutter, Ephraim, Cambridge, Mass.—Adjustable chair for invalids. N 58. 278
- Hardware, Edge Tools, Cutlery, Metallic Products.
- 1335 Collins & Co., New York, N. Y.—Cast steel tools; sledges. N 67. 280
- 1336 Elgin National Watch Co., Elgin, Ill.—Watchmakers' tools. P 67. 280

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Hardware, Tools, Cutlery.

- 1336<sup>a</sup> Sheperdson, H. S., & Co., Shelburn Falls, Mass.—Diamond, pod, and screw driver bits, nail sets, gimlets, tool cases, etc. H 68. 280
- 1337 Douglas Axe Manufacturing Co., Boston, Mass.—Axes, hatchets, adzes, picks, etc. N 67. 280
- 1338 Pugh, Job T., Philadelphia, Pa.—Screw augers and auger bits. Known as an old established manufacturer of augers and bits; established 1774; a descendant of the inventor of the screw auger. These augers are known to all who use them, as the old hand-made auger, thereby gaining great durability. N 72. 280
- 1338<sup>a</sup> Ernst & Elterich, Jersey City, N. J.—Tools. N 68. 280
- 1339 Conard, A. & I., Whittemarsh, Pa.—Cast steel wood-boring implements. P 71. 280
- 1339<sup>a</sup> Eagle Square Manufacturing Co., South Shalshbury, Vt.—Boring machines, squares, and rules. P 76. 280
- 1340 Elmira Nobles' Manufacturing Co., Elmira, N. Y.—Carpenters' and shipwrights' tools. N 71. 280
- 1340<sup>a</sup> Buck, Charles, Milbury, Mass.—Edge tools. N 71. 280
- 1341 Quint, S. H., & Son, Philadelphia, Pa.—Stencils, stamps, checks, tags, etc.; metallic pattern letters, for raised lettering or castings, names, addresses, etc. H 71. 280
- 1341<sup>a</sup> Genkinger, Adolph, Newark, N. J.—Tools, etc. N 68. 280
- 1342 Carter, Edw'd., Troy, N. Y.—Nickel-plated goods; planes, mechanics' tools. P 69. 280
- 1342<sup>a</sup> Howell, S. J., Orange, Mass.—Polishing lathes and wheels, tweezers, saw frames. N 68. 280
- 1343 Stanley Rule & Level Co., New Britain, Conn.—Rules, levels, squares, and carpenters' tools. N 68. 280
- 1343<sup>a</sup> Holland, James C., New York, N. Y.—Self-threading surgical and sewing machine needles, sail and packing needles. F 71. 280
- 1344 Billings & Spencer Co., Hartford, Conn.—Drop forgings, machinists' small tools, sewing machine shuttles. H 72. 280
- 1344<sup>a</sup> Bossard, H., Philadelphia, Pa.—Watchmaker's slide rest. N 43. 280
- 1345 Eddy, Geo. M., & Co., Brooklyn, N. Y.—Fine steel band saws and tempered steel springs. N 57. 280
- 1345<sup>a</sup> Fry's Bookbinder's Stamp & Tool Manufactory, Philadelphia, Pa.—Stamps and tools for the embellishment of books. T 75. 280
- 1346 Ross, Wm., & Bros., Philadelphia, Pa.—Bricklayers', plasterers', moulders' and saddlers' tools. N 72. 280
- 1346<sup>a</sup> Douglass Manufacturing Co., New York, N. Y.—Mechanics' tools, cutting and boring implements. N 70. 280
- 1347 Colton, Alfred J., Philadelphia, Pa.—Stair hand-rail planes and double-edge cutters, carpenters' moulding planes. N 69. 280
- 1348 Pratt, Jas. T., & Co., New York, N. Y.—Tool chests for amateurs or mechanics. N 68. 280
- 1349 Maltby, Curtiss, & Co., New York, N. Y.—Nail puller. B 77. 280
- 1350 Kohler, Martin, Philadelphia, Pa.—Knee-rest for tailors. N 70. 280
- 1351 Carter, Henry, New York, N. Y.—Moulders' and plasterers' tools. N 70. 280
- 1352 Sinas, Philip, Baltimore, Md.—Glaziers' diamonds, machinery for circular and oval cutting, engravers' points, carbon tools. N 68. 280
- 1353 King, Josiah, & Son, New York, N. Y.—Planes and tools for wood workers. N 71. 280
- 1354 Booth, John, & Son, Philadelphia, Pa.—Carpenters' tools and sundries. N 69. 280
- 1355 Barton, D. R., Tool Co., Rochester, N. Y.—Mechanics' edge tools. N 70. 280
- 1356 American Shovel Co., Birmingham, Conn.—Shovels and scoops. P 68. 280
- 1357 Johnson, Wm., Hedenberg Works, Newark, N. J.—Carpenters' and other mechanics' tools and hardware. N 69. 280
- 1358 Hampton, Chas. F., Ardmore, Pa.—Augers and bits. N 71. 280
- 1359 Ten Eyck Axe Manufacturing Co., Cohoes, N. Y.—Axes, carpenters' edge tools, etc. N 68. 280
- 1360 White, Wm., Newark, N. J.—Axes, hatchets, adzes, bush hooks, stone hammers, picks, etc.; carriage shaft-couplings. P 71. 280
- 1361 Selsor, Geo., & Co., Philadelphia, Pa.—Hammers, edge and railroad tools, coffee mills, saw cutters, tacks, and nails. N 68. 280
- 1362 Star Tool Co., Middletown, Conn.—Machinists' and carpenters' tools; squares, bevels, gauges, standard steel rules, etc.; blind trimmings. These goods are of the finest finish; the squares are perfectly accurate and of different varieties, adapted to the wants of workers in wood or iron; the rules are graduated on spring-tempered steel, and are made only by this company. P 67. 280
- 1362<sup>a</sup> Gardam, William, & Son, New York, N. Y.—Index plates, dividing and drilling machines. N 68. 280
- 1363 Snell Manufacturing Co., Fiskdale, Mass.—Augers, auger bits, and boring machines. P 71. 280
- 1364 Buck Bros., Riverlin Works, Milbury, Mass.—Shank and socket firmer chisels and gouges, plane irons, screw drivers, nail sets, etc. N 69. 280
- 1365 Maydole, D., & Co., Norwich, N. Y.—Cast steel hammers. N 71. 280
- 1366 Foerster & Kraenter, Newark, N. J.—Tools. N 68. 280
- 1367 Davis Level & Tool Co., Springfield, Mass.—Adjustable levels and planes and iron planes. P 71. 280
- 1368 DeWitt, Morrison, & Kelley, Philadelphia, Pa.—Carpenters', millwrights', gasfitters', pump, and car builders' machine and auger bits. These are the celebrated arrow brand for boring all kinds of wood. P 71. 280
- 1369 Sheperd & Lloyd, Philadelphia, Pa.—Scales, glass cutters, lard presses, and hardware specialties. N 71. 280
- 1370 Rowland, B., & Co., Philadelphia, Pa.—Shovels, spades, and scoops; draining and ditching tools. N 71. 280

## Hardware, Tools, Cutlery.

- 1871 Yerkes & Plumb, Philadelphia, Pa.—Edge tools, hammers; railroad, mining, and blacksmiths' sledges. N 70. 280
- 1872 Bailey, Leonard, & Co., Hartford, Conn.—Bench planes, try squares, bevels. N 68. 280
- 1873 Mayo, M. C., Boston, Mass.—Plane. P 71. 280
- 1874 Miller, Edward, & Co. Meriden, Conn.—N 48. 280  
 a Machine oilers. 280  
 b Tinner's hardware. 284
- 1875 Bemis & Call Hardware & Tool Co., Springfield, Mass.—Machinists' tools. P 72. 280
- 1876 Newton, C. C., Dunkirk, N. Y.—Twisted drill taps, dies, and reamers. T 60. 280
- 1877 Ives, W. A., & Co., New Haven, Conn.—Wood-boring implements, bit braces. N 72. 280
- 1878 Mills, E., & Co., Philadelphia, Pa.—Braces, bits, bevels, screwdrivers, spokeshaves, squares, and saw pads. P 68. 280
- 1879 Donaldson, J. W., Massillon, Ohio.—Block stamps for stamping garments for braiding and embroidery. P 68. 280
- 1880 Bailey Wringing Machine Co., New York, N. Y.—Metallic bench planes, spokeshaves, box scrapers, etc. N 69. 280
- 1881 Klein, Logan, & Co., Birmingham Tool Manufactory, Birmingham, Pa.—Picks, mattocks, fire shovels, etc. N 71. 280
- 1882 Crossman, A. W., & Son, West Warren, Mass.—Carpenters' hand tools. N 70. 280
- 1883 Nixon, G. W. C., New York, N. Y.—Engravers' tools. N 68. 280
- 1884 Ohio Tool Co., Columbus, O.—Planes, screws, edge tools, plane irons, handles, etc. N 71. 280
- 1885 Palmer, Wm. F., Berry street, bet. Fourth & Fifth streets, San Francisco, Cal.—Edge tools. All tools warranted of excellent cutting qualities. N 70. 280
- 1885a Rue, Theodore, Philadelphia, Pa.—Stencils and tools, nickel-plated signs and numbers, steel stamps. T 54. 280
- 1886 Taylor, Thomas, cor. Eddy & Friendship streets, Providence, R.I., P.O. box 993.—Bloodstone burnishers. Bloodstone burnishers and reflectors made to order. N 71. 280
- 1887 Smyth & Pennington, Paterson, N. J.—Files and rasps. N 69. 280
- 1888 Whitney Manufacturing Co., South Ashburnham, Mass.—Tools used in manufacturing chairs. W 50. 280
- 1889 Franklin, Mrs. Esther P., Philadelphia, Pa.—Marking stencils and branding irons. T 58. 280
- 1890 Sandusky Tool Company, Sandusky, O.—Planes, plane irons, bench and hand screws, chisel and file handles. P 71. 280
- 1891 Hopkins, C., Waltham, Mass.—Watchmakers' tools. N 68. 280
- 1892 Tower, John J., New York, N. Y.—N 68. 280  
 a Carpenters' planes, wrenches, adjustable clamps. 280  
 b Handcuffs and police implements, padlocks. 284
- 1893 Harrison & Kellogg, Troy, N. Y.—N 68. 280  
 a Screw wrenches. 280  
 b Plain, tinned, japanned, and nickel-plated malleable iron castings to order, in all varieties; extra refined air-furnace irons. (Low freights open all the year.) 283
- 1894 Wills, Edwin S., Philadelphia, Pa.—N 69. 280  
 a Tools. 280  
 b Wood screws, etc. 284
- 1895 Miller's Falls Co., Miller's Falls, Mass.—P 71. 280  
 a Mechanics' tools. 280  
 b Hardware. 284
- 1896 Lloyd, Supplee & Walton, Philadelphia, Pa.—P 70. 280  
 a Hollow auger, spokeshave. 280  
 b Locks. 284
- 1897 Vatterlein, John, Plainfield, N. J.—N 69. 280  
 a Carpenters' gauges. 280  
 b Gate hardware. 284
- 1898 Lowentrant, P., Newark, N. J.—N 70. 280  
 a Mechanics' tools. 280  
 b Hardware. 284
- 1899 Hart, Bliven, & Mead Manufacturing Co., New York, N. Y.—P 70. 280  
 a Carpenters' tools. 280  
 b Carpenters', saddlers', and carriage hardware; gong door bells. 284
- 1400 Hotchkiss's Sons, Bridgeport, Conn.—N 72. 280  
 a Hand drills, saw sets, currycombs. 280  
 b Pruning shears. 281  
 c Harness snaps, bull rings. 284
- 1401 Beaver Falls Cutlery Co., Beaver Falls, Pa.—Table, pocket, and miscellaneous cutlery. Special exhibits, large carving knife and fork, nine and a half feet long, cost \$1500; revolving knife, with three hundred and sixty-five blades. N 70. 281
- 1402 Barney, E. H., Springfield, Mass.—Skates, perforating stamp, show case and counter combined. Barney & Berry's celebrated "Club All-clamp and Rink Skates," patented 1859, 1866, 1868, 1873. I show the advantage of a screw fastening for operating clamps on metal-topped skates; also, originality of the designs, fine quality, workmanship, and finish. P 68. 281
- 1403 Will & Finck, San Francisco, Cal.—California carving sets and cutlery, bar tools. P 71. 281
- 1404 Union Hardware Co., Wolcottville, Conn.—Skates, skate straps, tool handles, wood turning, dog collars, etc. N 69. 281
- 1405 Badger, Benj. F., Charlestown, Mass.—Razor strops, Lending styles, "Genuine Emersons," established 1810; "Souvenir," for presentation; "German Belt," with non-extensible base; "Badger's super-quality;" "Patent X;" "Square." N 72. 281
- 1406 Goldschmidt, Herrmann, New York, N. Y.—Razor strops. N 71. 281

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.



## Hardware, Cutlery, Metallic Ornaments.

- 1407 Florence Sewing Machine Co., Florence, Mass.—Skates. N 71. 281
- 1408 Herder, L., & Son, Philadelphia, Pa.—Shears and scissors. N 69. 281
- 1409 Russell, John, Cutlery Co., Green River Works, New York, N. Y.—Table cutlery, butchers', hunters', painters', and druggists' knives, etc. N 67. 281
- 1410 Shipley, Howard W., Philadelphia, Pa.—Pocket cutlery. P 71. 281
- 1411 Seymour, Henry, & Co., New York, N. Y.—Tailors', bankers', and sheep shears, trimmers, and scissors. N 71. 281
- 1412 Evans, W. D., & Co., Philadelphia, Pa.—Razor strops and oilstone hone. N 72. 281
- 1413 Meriden Cutlery Co., New York, N. Y.—Table cutlery. N 69. 281
- 1414 Holley Manufacturing Co., Lakeville, Conn.—Pocket cutlery. P 71. 281
- 1415 Lamson & Goodnow Manufacturing Co., Shelburne Falls, Mass.—Table and butchers' cutlery. N 70. 281
- 1416 United States Steel Shear Co., West Meriden, Conn.—Solid cast steel scissors and shears. N 71. 281
- 1417 Miller Bro. Cutlery Co., West Meriden, Conn.—Pocket cutlery. N 70. 281
- 1418 Heinisch's, R., Sons, Newark, N. J.—Tailors' shears, scissors, and trimmings. N 69. 281
- 1419 Wiss, J., Newark, N. J.—Cutlery, shears, and scissors, hand and pole pruning shears. P 68. 281
- 1420 Plimpton, J. L., New York, N. Y.—Parlor skates. P 71. 281
- 1421 Friedman & Lauterjing, New York, N. Y.—Razors. P 70. 281
- 1422 Funke, Leopold, St. Louis, Mo.—Knife with three hundred and sixty-six blades. T 60. 281
- 1423 Robbins, Clark & Biddle, Philadelphia, Pa.—Cutlery. N 43. 281
- 1424 Geaswein & Reichhelm, New York, N. Y.—Polishing implements and materials. N 70. 281
- 1425 Northfield Knife Co., Northfield, Co. m.—Pocket cutlery. N 71. 281
- 1426 Breeden & Nelke, New York, N. Y.—Spring scissors and shears. P 71. 281
- 1427 Goodell Company, Antrim, N. H.—Cutlery and shoe knives. N 71. 281
- 1428 Marx Bros., New York, N. Y.—Folding pocket scissors. N 69. 281
- 1429 Winslow, Samuel, Worcester, Mass.—Skates. H 71. 281
- 1430 Brady, Edward, Philadelphia, Pa.—U 62. 281  
\* Metal boot fastening. 281  
\* Model of iron fort. 283
- 1431 Willis, Aug. L., Philadelphia, Pa.—Ice creeper. H 71. 281
- 1432 Peck & Snyder, New York, N. Y.—Skates. H 71. 281
- 1433 New York Knife Co., Walden, N. Y.—Table, pen, and pocket cutlery. N 67. 281
- 1433a Louis, Julius, & Co., Jeffersonville, Ind.—Oilstones. N 68. 282
- 1434 Mitchell, J. E., Philadelphia, Pa.—Carpenters', engravers', opticians', and cutlery's grindstones; oilstones, razor hones, etc. P 67. 283
- 1434a Boyd & Chase, New York, N. Y.—Arkansas and Washita oilstone. N 69. 282
- 1434b Zucker & Levett, New York, N. Y.—Hard and soft rouge and composition for polishing metals. T 53. 282
- 1435 Baeder, Adamson, & Co., Philadelphia, Pa.—N 68. 282  
a Sand and emery paper, emery cloth, emery, corundum, flint. 282  
b Glue. 65a  
c Curled hair. 669
- 1435a Nittinger, Edward, Philadelphia, Pa.—Quartz paste for sharpening knives, etc. T 52. 282
- 1435b Tucker, Geo., New York, N. Y.—Polishing compositions. N 68. 282
- 1435c White, T. R., Philadelphia, Pa.—Sandilene, for cleaning marble, metal, glass, etc. T 54. 282
- 1436 Harrison, W. H., & Bros., Philadelphia, Pa.—Low and elevated firegrates, fenders, fireplaces, etc. T 52. 283
- 1436a Garland, Benj., Philadelphia, Pa.—Iron bridge and fence railings. V 62. 283
- 1437 Dixon, Thos. S., & Sons, Philadelphia, Pa.—Grates, fenders, fireplace fittings, and gas logs. T 49. 283
- 1437a Manly, M. M., & Son, Philadelphia, Pa.—Wrought iron hand rails, mouldings, and bridge railings. T 60. 283
- 1438 Jackson, Wm. H., & Co., New York, N. Y.—Grates, fenders, fireplaces, fire irons, and fancy coal boxes. N 67. 283
- 1439 Lalance & Grosjean Manufacturing Co., New York, N. Y.—Stamped iron culinary ware. T 68. 283
- 1440 Reyburn, Hunter, & Co., Philadelphia, Pa.—Weather vanes. N 62. 283
- 1441 Tin Plate Decorating Co., New York, N. Y.—Decorated tin plates, boxes, cans, etc. N 70. 283
- 1442 Miller & Krips, 716 & 718 Cherry street, Philadelphia, Pa.—Plain and ornamental bronze; white bronze, brass, German silver, and zinc castings. Also, sole manufacturers of bronze reliefs in a new style of mounting; bronze reliefs made to order, from life or photograph. P 72. 283
- 1443 Demuth, Wm., & Co., 501 Broadway, New York, N. Y.—Show figures in metal and wood, meerscham and briar pipes, with rubber and amber mouthpieces; smokers' articles in general. P 69. 283
- 1444 Mott, J. L., Iron Works, New York, N. Y.—Fountains, vases, statuary, settees, aquaria, aquarium fountains, drinking fountains, candelabra, lamp pillars, crestring, castings, railings, gates, summer houses, band stands, stable fixtures, etc. N 54. 283
- 1445 Paxon, Comfort & Co., New York, N. Y.—Zinc monuments. T 64 and outside. 283
- 1446 Woods, Sherwood, & Co., Lowell, Mass.—White lustral wire ware, comprising an extensive line of household, table, and fancy goods, such as fruit, cake and jewel baskets, tea and coffee strainers, castors, toilet articles, etc. N 72. 283

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Wrought and Cast Metal Work, Hardware.

- 1447 Ansonia Brass & Copper Co., Ansonia, Conn.—Brass and nickel-plated kettles. N 57. 283
- 1448 Rohrman, J. Hall, & Son, Philadelphia, Pa.—Tea, coffee, and spice caddies; water coolers and decorated japanned tinware. P 70. 283
- 1449 Hussey, C. G., & Co., Pittsburg, Pa.—Copper sheet, circle, and bottoms; planished and ingot copper, copper lightning rods, sheet brass, brass kettles. N 72. 283
- 1450 Champion Fence Co., Kenton, O.—Wrought and malleable iron fence and gate. The advantages claimed for the champion iron fence are: 1st—The longitudinal rail is rolled in T shape, thus giving the greatest lateral strength, also horizontal strength, when put up in fence, without bolts, rivets, or forging whatever, leaving the iron as it comes from the rolls. 2d—As the arched or cylindrical form of the iron resists the greatest strain, the pickets are rolled concave, convex, with a flange on each side, forming the strongest picket that can be made from the same amount of iron. 3d—The ornaments used, together with the different connecting parts, are made of refined malleable iron, or stamped from wrought iron plates, and of any desired form, and at one-tenth the cost of making them at the forge. 4th—The pickets are driven into the ornaments and passed to nearly the top of the picket, at the rear of the ornaments. There are lugs and clips, which are clinched, combining ornament and picket together, forming a strong and durable top-head for the picket. 5th—The fence is put together with clips; these are slipped on the T rail, and the sides of the ornaments form circles, or segments of circles, thus rendering them adjustable to any and all grades or angles. 6th—The panels are connected with a compound clamp, which holds them firmly together, at the same time allowing for the expansion and contraction of the iron. 7th—That we have in the combination of our rail and picket the strongest and most ornamental fence that can be made, from the same amount of material. 8th—That we can, by our adjustable posts, keep our fence in perfect line; also, that we can set the fence upon coping or stone walk of any grade, the same as upon our iron foundation. 9th—That we can pack the fence for shipment, in compact bundles, and put it upon the ground as conveniently as a wooden fence can be put up. 10th—That we manufacture the fence without the use of any costly and cumbersome machinery, being virtually made when the iron comes from the foundry and the rolls. 11th—The base upon which the fence is set is of cast iron, eighteen inches wide at the bottom, and six inches at the top; twenty-eight inches in length, which is set in the ground; upon this foundation is placed a wrought iron post, adjustable front and rear, and also adjustable at the top, while at the bottom it would be stationary, or *vice versa*. Upon this post we also adjust the height of the fence. One of the beauties of our invention is, that we make a fence that looks light, yet strong and durable. (*Ohio State Building.*) 283
- 1451 Bevin Bros. Manufacturing Co., East Hampton, Conn.—N 72. 283
- Bell metal kettles. 283
- Bells. 284
- 1452 Armbruster, Jacob H., Philadelphia, Pa.—Organ and sash weights. (*Organ, East Gallery.*) 284
- 1453 Yale Lock Manufacturing Co., Stamford, Conn.—Locks, ornamental bronze hardware, post-office boxes. P 72. 284
- 1453a Bray, Edw. L., Boston, Mass.—Balance spring curtain fixture. (*East Gallery.*) 284
- 1454 Stewart & Mattson, Philadelphia, Pa.—Building hardware, locks, door knobs and trimmings. N 69. 284
- 1454a Dexter Spring Co., Hulton, Pa.—Carriage springs. T 60. 284
- 1455 Nock, Geo. W., Philadelphia, Pa.—Locks and padlocks. N 70. 284
- 1455a Cleveland Steel Horseshoe Co., Cleveland, O.—Steel horseshoes and bars, hand shoe formers. T 59. 284
- 1456 Trenton Lock & Hardware Co., Philadelphia, Pa.—Patent lever and spring, with corrugated bolt door locks, latches, knobs, and other hardware. N 68. 284
- 1456a Adams, Wm. R. M., New York, N. Y.—Door bolt and chain check. N 72. 284
- 1457 Shannon, J. B., Philadelphia, Pa.—Hand-made locks and building hardware. N 72. 284
- 1457a Smith & Egge, Bridgeport, Conn.—Padlocks, hasps, chains, etc. N 70. 284
- 1458 Wells & Hope Co., Philadelphia, Pa.—Metallic show cards and advertising signs; decorative glass printing, etc. P 72. 284
- 1458a Stafford Manufacturing Co., New York, N. Y.—Stencil combinations, machine cut alphabets and figures; key-rings, checks, and badges. N 69. 284
- 1459 Corbin, P. & F., New Britain, Conn.—House trimmings and miscellaneous hardware. N 72. 284
- 1459a Brooke, E. & G., Birdsboro', Pa.—Nails. T 67. 284
- 1460 American Stair-Rod Co., New York, N. Y.—Stair rods and stair carpet fasteners. N 71. 284
- 1461 Stanley Works, New Britain, Conn.—Wrought iron butts, japanned, bronzed, and plated; hinges, door bolts, etc. P 71. 284
- 1461a Orbeton, W. W. S., Boston, Mass.—Screw braces and screw-brace blind hinges. N 68. 284
- 1462 Globe Nail Co., Boston, Mass.—Machine-made horseshoe nails. N 71. 284
- 1463 Tuchfarber, F., & Co., Cincinnati, O.—Enameled iron show cards. P 72. 284
- 1464 Wiler, Wm., Philadelphia, Pa.—Stair rods and plates. N 71. 284
- 1465 Walton, E. S., & Co., Philadelphia, Pa.—Lock hardware and fine bronze work. N 72. 284
- 1467 Dunbar, Hobart, & Whidden, South Abington, Mass.—Tacks, brads and nails, steel shanks, heel plates, etc. P 72. 284
- 1468 Hildebrand & Wolf, Philadelphia, Pa.—Trunk locks, padlocks, dead-latches, door springs, etc. P 69. 284

## Hardware, Locks, etc.

- 1409 Carr, Crawley, & Devlin, Philadelphia, Pa.—Building, cabinet, carriage, and saddlery hardware; malleable iron, brass, and steel castings. N 70. 284
- 1470 Hall's Safe & Lock Co., Cincinnati, O.—Bank and time locks. H 67. 284
- 1471 Whitaker & Skirm, Trenton, N. J.—Iron chains, chute nails. T 65. 284
- 1472 Gould's, M., Sons, 83 & 85 Duane street, New York, N. Y., and 514 Commerce street, Philadelphia.—Stair rods, step plates, dog collars, upholstery, and trunk hardware. Manufacturers of stair rods, stair plates, dog collars, stepladders, trunk rivets, and all kinds of trunk hardware; also, a general line of upholstery hardware. Factory, Newark, N. J. N 71. 284
- 1473 Morton, Thos., New York, N. Y.—Sash chain and attachments for suspending windows, doors, etc. T 49. 284
- 1474 Mallory, Wheeler, Co., New Haven, Conn.—Door locks and knobs, padlocks, etc. N 69. 284
- 1475 Gaylord Manufacturing Co., Chicopee, Mass.—Cabinet locks. N 70. 284
- 1476 Union Manufacturing Co., New Britain, Conn.—Plain and ornamental butt hinges. N 69. 284
- 1477 Mercereau, W. T. & J., Newark, N. J.—Stair rods and plates, dog collars and muzzles, bridle fronts, and upholsterers' hardware. N 71. 284
- 1478 Marvin's Safe Co., New York, N. Y.—Locks. H 69. 284
- 1479 Behannan, Wilson, Brooklyn, N. Y.—Brass spring padlocks and car locks. P 68. 284
- 1480 Union Steel Screw Co., Cleveland, O.—Bessemer steel wood screws, with samples showing stages of manufacture. T 59. 284
- 1481 Clark & Co., Buffalo, N. Y.—Nickel-plated builders' hardware. N 71. 284
- 1482 Van Wagoner & Williams, 82 Beckman street, New York, N. Y.—Spring hinges and door springs of the leading kinds, for screen and other doors, gates, etc. All articles of superior manufacture. N 70. 284
- 1483 Gong Bell Manufacturing Co., East Hampton, Conn.—Bells. P 72. 284
- 1484 Romer & Co., Newark, N. J.—Locks for railroad switches, cars, prisons, stores, etc. N 71. 284
- 1485 Cowell, J. J., & Co., Newark, N. J.—Builders' and trunk hardware. Manufacturers of trunk and builders' hardware, sash pulleys, trunk rollers, catches, handle caps, stay hinges, clamps, etc. Also malleable and gray iron small castings. N 71. 284
- 1486 Middletown Tool Co., Middletown, Conn.—Plane irons, harness snaps, washer cutters, hitching chains, plane-makers' hardware, etc. P 71. 284
- 1487 Whipple, H. J. P., West Meriden, Conn.—Door-knob attachment. P 68. 284
- 1488 McEachern, Daniel, Wilmington, Del.—Cast iron Centennial chain, each link representing a State and giving the Governor's name. Q 78. 284
- 1490 Tiebout, W. & J., New York, N. Y.—Brass, galvanized, and ship chandlery hardware. H 66. 284
- 1491 Parker & Whipple Co., West Meriden, Conn.—Door-knob attachment and adjustment. N 69. 284
- 1492 Thorn, Stephen S., 39 Oliver street, Newark, N. J.—Brass, copper, and iron wire ferrules, from  $\frac{3}{8}$  to  $3\frac{1}{4}$  inches, for paint brushes—these ferrules warranted not to burst or expand; bonnet and insulating wire. N 69. 284
- 1493 Worrell Bank Lock Manufacturing Co., Philadelphia, Pa.—Bank lock. H 70. 284
- 1496 Herring & Co., New York, N. Y.—Safe, bank, and time locks. H 69. 284
- 1497 Neuman, R., & Co., Newark, N. J.—Satchel and traveling bag frames, and bag trimmings. P 68. 284
- 1498 Van Alen & Co., Northumberland, Pa.—Cut nails and spikes. T 66. 284
- 1499 Blake Bros. Hardware Co., New Haven, Conn.—Hardware for builders', cabinet makers', and carriage makers' use. P 69. 284
- 1500 Miller, D. K., Lock Co., Philadelphia, Pa.—Locks. P 70. 284
- 1501 Eagle Lock Co., Terryville, Conn.—Trunk and cabinet locks. H 67. 284
- 1502 Judd, Hubert L., New York, N. Y.—Upholstery and fancy hardware. N 69. 284
- 1503 Coleman Eagle Bolt Works, Philadelphia, Pa.—Carriage bolts, nuts, and axle clips. P 71. 284
- 1504 Meeker, D. M., & Son, Newark, N. J.—Iron, bronze, and German silver castings. N 71. 284
- 1505 Hall, P. W., Austin, Texas.—Combination door, drawer, and trunk locks. P 68. 284
- 1506 Norwalk Lock Co., South Norwalk, Conn.—Door locks, knobs, padlocks, and builders' hardware. N 70. 284
- 1507 Terwilliger & Co., New York, N. Y.—Safe locks. H 72. 284
- 1508 Arms, Bell, & Co., Youngstown, O.—Nuts, bolts, and washers. V 63. 284
- 1509 Wheeling Hinge Co., Wheeling, W. Va.—Hinges, butts, wrought goods, and washers. N 68. 284
- 1511 Vandusen & Tift, Cincinnati, O.—Bells. T 53. 284
- 1512 American Screw Co., Providence, R. I.—Gimlet pointed screws of iron, brass, and steel; coach, hand rail, and machine screws; rivets; stove and tire bolts. P 69. 284
- 1513 Branford Lock Works, New York, N. Y.—Rim and mortise door locks and latches, brass and steel keys, door knobs, lock furniture. P 69. 284
- 1514 Easton Lock Works, Easton, Pa.—Rim and mortise locks and latches; safety locks and night latches. N 72. 284
- 1515 Wilson, John, Chicago, Ill.—Fire nozzle. B 69. 284
- 1515a Keystone Hardware Manufacturing Co., Reading, Pa.—Hardware. N 69. 284
- 1516 Quigley, W. E., Waterbury, Pa.—Hand-made horseshoes. T 72. 284

## Hardware, Rubber Goods, Cordage, etc.

- 1517 Evans, F. H., Brooklyn, N. Y.—Expansion bolts and screw fastenings; photographs of other manufactures. P 69. 284
- 1519 Field, A., & Sons, Taunton, Mass.—Tacks, brads, nails, etc. P 68. 284
- 1520 Valentine & Butler Safe & Lock Co., New York, N. Y.—Safe locks. H 70. 284
- 1521 Lewis, Oliver, & Phillips, Pittsburg, Pa.—Wagon and heavy hardware, fence pickets, etc. T 64. 284
- 1522 New Britain Lock Co., New Britain, Conn.—Key register; dial, bank, safe, and time locks. N 72. 284
- 1523 American Wire & Screw Nail Co., cor. Madison and State streets, Covington, Ky.—Common, bright, smooth, and barbed wire nails with sharp points; small, large, depressed heads and without heads. Moulding nails, wire cigar-box nails, iron and brass oval head escutcheon pins. Wire screw nails (patented). These nails have round, tapering points, and screw thread till under the head. Are to be driven with a hammer as quick as common nails, but turn like screws while driving under the hammer. Wire nails of every description, also blued, tinned, and colored nails. P 71. 284
- 1524 Buckman, Ira, Brooklyn, N. Y.—Torsion spring hinge, automatic window lock, and door fixtures. N 68. 284
- 1525 Riverside Iron Works, Wheeling, W. Va.—Nails and spikes. T 64. 284
- 1526 Turner & Seymour Manufacturing Co., Walcottville, Conn.—Brass and iron upholstery goods and hardware, and notion goods. N 68. 284
- 1527 Sargent & Greenleaf, Rochester, N. Y.—Chronometer, bank, safe, and flat key locks. H 72. 284
- 1528 Wilcox, Wm., Manufacturing Co., Middletown, Conn.—Padlocks, plate locks, and keys. N 71. 284
- 1529 King, J. M., & Co., Waterford, N. Y.—Stocks and dies, plug and taper taps, pliers, etc. N 71. 284
- 1530 Keyless Padlock Co., New York, N. Y.—Keyless padlocks. N 70. 284
- 1531 Lyon, Sylvanus, New York, N. Y.—Locks. N 72. 284
- 1532 Johns, H. W., New York, N. Y.—Tacks, etc. P 47. 284
- 1533 Barton, W. E., East Hampton, Conn.—Bells. N 71. 284
- 1534 Clarke Combination Lock Co., Baltimore, Md.—Combination keyless locks. P 68. 284
- 1535 Orbeton, Wm. W., Boston, Mass.—Screw braces and hinges. N 68. 284
- 1539 Sellers, Chas. P., Philadelphia, Pa.—Corn brooms and whisks. T 46. 283
- 1540 Reynolds, C. T., & Co., New York, N. Y.—Brushes. P 42½. 286
- 1540a Isaacs, M. C., & Co., Chicago, Ill.—Wire brooms, casting, and blue brushes. N 71. 286
- 1541 Leiner, M., New York, N. Y.—Brushes and car cleaners. T 65. 285
- 1541a Kerr, Hugh S., Philadelphia, Pa.—Sponge brushes. B 71. 286
- 1542 Lovell, G. H. & M. F., Philadelphia, Pa.—Ear brush. T 50. 286
- 1542a Pollock & Son, Newark, N. J.—Brushes, buffs, etc. N 68. 286
- 1543 Miles, Bros., & Co., New York, N. Y.—Brushes. N 69. 286
- 1544 Grand Rapids Brush Co., Grand Rapids, Mich.—Brushes. N 72. 286
- 1545 Clinton, E., & Co., Philadelphia, Pa.—Brushes. N 66. 286
- 1546 Bowman, C. A., & Bro., Madison, Ind.—Clothes brushes made of broom corn. T 46. 286
- 1547 Johns, H. W., New York, N. Y.—Brushes. P 47. 286
- 1548 Florence Manufacturing Co., Florence, Mass.—Hair brushes. B 70. 286
- 1550 Bailey, John T., & Co., Philadelphia, Pa.—Rope and twines. B 68. 287
- 1551 Baumgardner, Woodward, & Co., Philadelphia, Pa.—Cordage and clothes lines, tarred yarns, hemp packing. B 70. 287
- 1551a Lawrence, Waterbury, & Co., New York, N. Y.—Cordage. T 78. 287
- 1552 Vyse, Robt. H., Brooklyn, N. Y.—Rawhide rope, sash cord, and round belting. B 68. 287
- 1553 Hooper, Wm. E., & Sons, Baltimore, Md.—Twine. D 78. 287
- 1554 Hart, A. H., & Co., 90 White street, New York, N. Y.—Elm Flax Mills; flax twines for upholsterers, sail, bag, broom makers, etc.; flax yarns, shoe threads, etc. B 68. 287
- 1555 Wall's, William, Sons, New York, N. Y.—Ships' rigging; rope and cordage. E 78. 287
- 1556 Tucker, Carter, & Co., New York, N. Y.—Wire and manila ropes. B 69. 287
- 1557 Hart, Clarence A., Philadelphia, Pa.—Painted silk banners. B 76. 288
- 1557a Reynolds, J. P., & Co., New York, N. Y.—Escutcheons of military and naval service. T 44. 288
- 1558 Lilley, M. C., & Co., Columbus, O.—Masonic goods and society supplies. Manufacture society furniture, jewels, regalia, uniforms, banners, band and military goods. Price lists upon application. P 65. 288
- 1559 Wilson, J. H., Philadelphia, Pa.—Regalias, flags, and banners. F 70. 288
- 1560 New England Bunting Co., Lowell, Mass.—Bunting. B 75. 288
- 1561 Salisbury & Co., New York, N. Y.—Muslin flags; engraving, designing, lithographing, and printing; original manufacturers of American, election, and other decorations—all nations—in sets or single. H 77. 288

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 1536 Glendale Elastic Fabrics Co., Easthampton, Mass.—Woven and braided elastic rubber fabrics. F 68. 285
- 1537 Easthampton Rubber Thread Co., Easthampton, Mass.—India rubber thread and rubber in process of manufacture. F 68. 285
- 1538 Willis, Aug. L., Philadelphia, Pa.—Rubber rails for tracks. H 71. 285

ESTABLISHED 1841.

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**FISH LINES,**

**FISH HOOKS,**

**SMALL WARES,**

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**ETC., ETC.**

## Paper, Wooden, Metallic Fabrics, etc.

- 1562 Piton, Camille, Philadelphia, Pa.—Trophies representing America, Europe, Asia, and Africa. (*News and Centre Transcript.*) 288
- 1563 Tremain, Chas., Manlius, N. Y.—Paper barrels; cheese and fruit packages. T 57. 289
- 1564 Trasel, Edward G., New York, N. Y.—Papier maché household ware, chamber sets, pails, cuspadors, etc. P 64. 289
- 1565 Wakefield Rattan Co., Boston, Mass.—Rattan baskets. T 57. 289
- 1566 Beaudett, Homer J., Greenpoint, N. Y.—Fancy scroll work. P 50. 289
- 1567 Waters, E., & Sons, Troy, N. Y.—Boat barrels, camp stools, seats, packages for volatile liquids, etc., made of paper. B 73. 289
- 1568 Jennings Brothers, 352 Pearl street, New York, N. Y.—Japanese paper ware. Their manufacture of pails, basins, pitchers, spittoons, cuspadors, etc., are thoroughly waterproof, durable, and ornamental; are not affected by the climate. T 68. 289
- 1569 Preston & Merrill, Boston, Mass.—Wooden boxes. P 48. 289
- 1570 Dorman Manufacturing Co., New York, N. Y.—Baskets, urns, carriage bodies, etc. P 59. 289
- 1571 Paxson, Comfort, & Co., Philadelphia, Pa.—Burial robes and dresses; casket trimmings. B 73 and outside. 290
- 1572 Smith, Wm. M., West Meriden, Conn.—Casket trimmings, handles, name plates, and ornaments. N 43. 290
- 1573 Rogers, C., & Bros., West Meriden, Conn.—Gold and silver plated coffin and casket trimmings. F 72. 290
- 1574 Chase, F. & P. F., Penn Galvanic Works, Philadelphia, Pa.—Galvanized iron goods, sheet iron, water pipe, boilers, hardware, shipsmithing, railings; bar, hoop, and chain iron. P 68. 291
- 1574a Danby, Geo., & Co., Philadelphia, Pa.—Galvanized sheet iron, mantels, cornices, railings, etc. Y 59. 291
- 1575 Straus, J. E., & Co., Philadelphia, Pa.—Galvanized, wrought, and cast iron work. P 71. 291
- 1577 Philadelphia Galvanizing Co., Philadelphia, Pa.—Galvanized sheet iron pipe, railing, wirework, chairs, boilers, sinks, coal hods, etc. P 69. 291
- 1578 Kittredge Cornice & Ornament Co., Salem, O.—Sheet metal cornices, doors, shutters, and pavilion; architectural ornaments, light wrought iron work. (*Outside.*) 291
- 1579 Falstrom & Tomqvist, Passaic City, N. J.—Galvanized iron cornice and ornamental sheet iron work for buildings. P 68. 291
- 1580 Philadelphia Architectural Iron Co., Philadelphia, Pa.—Galvanized iron and sheet zinc gate entrance. P 70. 291
- 1581 McCullough Iron Co., Philadelphia, Pa.—Galvanized sheet iron. P 70. 291
- 1582 Brown & Owen, Philadelphia, Pa.—Cemetery inclosure, ornamental iron work, and wrought iron pipe. (*Outside.*) 291
- 1583 Cornell, J. B. & J. M., 141 Centre street, New York, 9 Studio Buildings, Boston, 427 Walnut street, Philadelphia.—All kinds of heavy and light wrought and cast iron work for buildings and bridges; cast iron fronts, stairs, columns, girders, lamp posts, etc.; wrought iron columns, girders, beams, railings, sheet lath, etc.; steel and iron rolling shutters, fire-proof columns, burglar proof safes and vaults. Works cover six acres of ground. P 70. 291
- 1584 Marshall Brothers & Co., Philadelphia, Pa.—Galvanized and leaded sheet iron work. P 71 and outside. 291
- 1585 Zinc Roofing & Ornamenting Works, Chicago, Ill.—Ornaments in pressed and cast zinc, brass, and copper; zinc statues, emblematic signs, etc. P 69. 291
- 1586 Buringer Brothers, Dayton, O.—Ohio coat-of-arms of galvanized iron. (*In gable of Ohio State Building.*) 291
- 1586a Smith, S. A., New York, N. Y.—Rolling chairs. (*In use in the buildings.*) 292

## Carriages, Vehicles, and Accessories.

- 1587 Blake Bros. Hardware Co., New Haven, Conn.—Trucks for moving open barrels and kegs. P 69. 294
- 1588 Newichawanick Co., South Berwick, Me.—Horse blankets and goods for horse clothing. R 78. 296
- 1588a Hopkins & Robinson Manufacturing Co., Akron, O.—Animal pokes. 296
- 1589 Pettingell & Sawyer, East Cambridge, Mass.—Horse and wagon covers. F 76. 296
- 1590 Eager, P. B., Tower, & Co., Boston, Mass.—Oiled horse covers. C 78. 296
- 1592 Faxon, E., & Co., Philadelphia, Pa.—Wool extract. P 43. 667

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# GREAT BRITAIN.

(North of Nave, Columns 23 to 38.)

## Chemical Manufactures.

### Chemical Manufactures.

- 1 Hutchinson, John, & Co., Widnes, Lancashire.—Soda ash, soda crystals, caustic soda, bicarbonate of soda, salt cake, bleaching powder, and sulphur recovered from vat waste. 200
- 2 Corbett, John, Stoke Prior Salt Works, Worcestershire.—Refined salt. 200
- 3 Richards, Kearne, & Gasquoine, Mal-kins Bank Alkali Works, Sandbach, Cheshire.—Brine, sulphate of ammonia, soda ash, bicarbonate of soda. 200
- 4 Gaskell, Deacon, & Co., Widnes, Lancashire.—Carbonated soda ash, and refined alkali, bleaching powder, soda crystals, bicarbonate of soda, and chloride of calcium. 200
- 5 Brunner, Mond, & Co., North-wich, Cheshire.—Alkali or carbonate of soda. 200
- 6 The Desoto Alkali Co. (limited), Widnes, Lancashire.—Caustic soda, and black ash or ball soda. 200
- 8 Runcorn Soap & Alkali Co. (limited), Liverpool.—Bleaching powder, soda ash, crystals of soda, caustic soda, and refined resin. 200
- 9 Muspratt Bros. & Huntley, Liver-pool.—Soda ash, caustic soda, bleaching powder, soda crystals, and bicarbonate of soda. 200
- 10 Muspratt, James, & Sons, Liver-pool.—Soda ash, cream caustic soda, bleaching powder, chlorate of potash, salt cake, and brimstone. 200
- 12 Spence, Peter, Manchester.—Crys-tallized alum, in block and crystals, and a new alumino-ferric compound for pre-cipitating sewage and for paper making. 200
- 13 Higgin, Thomas, & Co., Liverpool.—Salt. (*Agricultural Hall*.) 200
- 14 The Newcastle Chemical Works Co. (limited), Newcastle-on-Tyne.—Soda ash, alkali, bleaching powder, crystals and bicarbonate of soda, caustic soda, chloride of calcium. 200
- 15 White, John & James, Shawfield Works, Glasgow.—Bichromate of pot-ash. 200
- 16 Liver Alkali Works Co. (limited), Liverpool.—Caustic soda. 200
- 17 Young, James, Kelly, Wemyss Bay, N. B.—Illustrations of manufacture of carbonate of soda, chlorate of potash, pro-ducts from petroleum, coal, and shale, pre-servation of iron ships. 200
- 18 Greenbank Alkali Co., St. Helen's, Lancashire.—Chemical products, pure caustic soda, chlorate of potash. 200
- 20 Jennings, T., Brookfield Chemical Works, Cork.—Carbonate of and calcined magnesia. 200
- 21 Calvert, F. C., & Co., Bradford, Manchester.
  - a Carbolic and cresylic acids and deriva-tives. 200
  - b Carbolic acid soaps. 202
- 22 Parkinson Bros., Burnley.—Baking-powder. 200
- 23 Morson & Son, London.—General chemicals and specialties, creosote, pep-sine, gelatine, etc. 200
- 24 Allen & Hanburys, London.—Pâté de jujube and analogous articles. 200
- 25 Gerrard, Alfred William, London.—Pharmaceutical preparations. 200
- 26 Chance Bros., Alkali Works, near Birmingham.—Chemical products. 200
- 27 Wyndham, F., & Co., London.—"Esprit des Œufs" (spirit of eggs), a medicinal compound. 200
- 28 Price's Patent Candle Co. (limited), Belmont Works, London.—Candles, night-lights, glycerine, fatty acids, ma-chinery oils; toilet, household, and mill soaps, glycerine, paraffine, stearine, and tapers. 202
- 29 Field, J. C. & J., London.—Candles, toilet soaps, beeswax, and refined yellow wax, white wax, dyers' soaps, sealing wax, and fancy ornamental candles. 202
- 30 Pears, A. & F., Lanadron Soap Works, Isleworth, near London.—Trans-parent soap. 202
- 31 Wright & Holdsworth, London.—Dog soap, worm powders, Bauer's baby soap. 202
- 32 Cohné, Sigismund, London.—Chem-ical and medical soaps. 202
- 33 Craig & Rose, Caledonian Oil & Color Works, Edinburgh.
  - a Oils. Digitized by Google 202
  - b Paints and colors. 202

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



# BRITISH ADVERTISEMENTS.

PRIZE MEDAL,



LONDON, 1862.

## BARLOW & JONES,

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See SHOW CASE, Class 280, E 27.

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**FISH HOOKS AND FISHING TACKLE,**

**ABBEY MILLS, REDDITCH, ENGLAND.**

Prize Medals—London, Paris, Berlin, Boulogne, & Bergen.

## Chemicals, Ceramics.

- 34 Williams, Miles, Britannia Varnish Works, Wigan, Lancashire.  
 a Gas carburetter and drawings; improvement in manufacture of gas and liquid fuel. 201  
 b Varnishes, varnish paints, enamels, lacquers, and specimens of work. 202
- 35 Hickisson, Mrs. M. A., London.—Marking ink, pens, linen stretcher, and framed specimens. 202
- 36 Turner, Chas., & Son, London.—Varnishes, fine colors, gums. 202
- 38 Lyons, William, Manchester.—Writing and copying fluids and inks, marking ink, ink powders, paper dye tablets. 202
- 39 Bowman, Charles, London.—Solid ink, stencil plates, stencil brushes, etc. 202
- 40 Rawlins & Son, Brook Works, Prescott.—Ultramarine and smalts, with raw materials. 202
- 41 Chambers, T. F., Hull.—Black varnish. 202
- 42 Johnson Bros., Hull.—Colors, varnishes, machinery oils, and locomotive and anti-friction greases. 202
- 44 Rowney, George, & Co., London.—Pigments, colors, varnishes, artists' materials. 202
- 45 Storer, David, & Sons, Glasgow.—Colors, pigments, and wood stains; Venetian, Indian, and other reds; drop black, greens, and other pigment colors. 202
- 46 Cooper & Co., London.—Writing, register, and japan inks, copying and fluid ink; red, scarlet, blue, and violet inks. 202
- 47 Silicate Paint Co., Liverpool.—Silicate paints and colors; petrifying liquid for damp walls; enameling and anti-fouling paints; cement for steam joints, anti-incrustation fluid, nitre killer, etc. 202
- 47a Young & Strang, Glasgow.—Gums for calico printing. 202
- 48 Blackwood, John, & Co., London.—Writing, copying, and indelible marking inks. 202
- 49 Mackay, John, Edinburgh.  
 a Spirit varnishes and polishes for coating wood of all colors, white, mahogany, oak, or ebony. 202  
 b Fluid flavoring essences from spices, fruits, and vegetables. 203
- 50 Stephens, Henry Charles, London.—Writing fluids and copying inks, ink powders, machine ruling and indorsing inks; stains for wood. 202
- 51 Crown Perfumery Co., London.—Perfumes and toilet requisites. 203
- 52 Brooks, Henry, & Co., London.—Perfumery. 203
- 53 Atkinson, J. & E., London.—Perfumery and toilet articles. 203
- 54 Jaap, John, Glasgow.—Flavoring essences and other preparations. 203
- 55 Low, Son, & Haydon, London.—Perfume extracts, toilet soaps. 203

- 56 Perks, Samuel, Hitchin Herts.—Essential oil of lavender, extract lavender flowers, etc. 203
- 57 Thielley, Eugene Henry, London.—Hair tincture, dyes, and bleaching liquid, tonics, and cultivators. 203
- 58 Rimmel, Eugene, London.—Perfumery and toilet articles; perfume vaporizers, etc. 203
- 59 Evans, Sops, & Co., Liverpool, and Evans, Leather, & Evans, London.—Perfumery. 203
- 59a Sturge's Montserrat Co. (limited), Broad street, Birmingham.—Essences. 203
- 60 Bryant & May, Fairfield Works, London.—Safety matches, wax vestas and vesuvians, decorated metal and other boxes. 204
- 62 Bickford, Smith, & Co., Tuckermill, Cornwall.—Safety fuses for blasting operations. 204
- 63 Pigou, Wilks, & Laurence (limited), London.—Military, sporting, African, and mining powders of every description. 204
- 64 Lacey, Richard George, Coast Guard Station, Leigh, Essex.—Rocket apparatus for throwing lines from one ship to another. 205

## Ceramics—Pottery, Porcelain, Glass, etc.

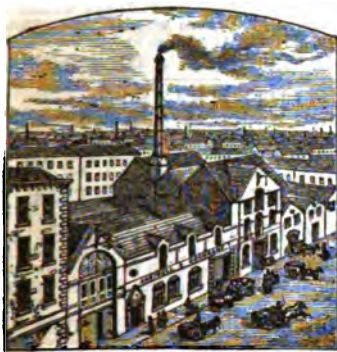
- 65 Peake, Thomas, The Tileries, Tunstall, Staffordshire.  
 a Paving and facing bricks. 206  
 b Ridge, roofing, and flooring tiles; ornamental tiles for garden borders, skirtings, and mural decorations. 206
- 66 Hamblet, Joseph, Piercy Blue Brick Works, West Bromwich, Staffordshire.  
 a Vitrified blue bricks, copings, plinths, stable floor bricks, and quarries. 206  
 b Ridges, roofing tiles, and terra metallic pavings. 208
- 67 Wood & Ivory, Albion Brick Works, West Bromwich, Staffordshire.—Blue terra metallic building and fancy bricks; mouldings, copings, footpath paving bricks, grooved stable floor bricks, terminals; terra metallic vases, trusses, etc. 206
- 68 Johnson & Co., Ditchling Potteries, Sussex.—Terra-cotta as applied to building purposes; terminals, vases, ridge tiles, and general terra-cotta work. (*Agricultural Hall*.) 206
- 69 Matthews, John, Royal Pottery, Weston-super-Mare, Somerset.—Terra-cotta vases, fountains, and baskets; garden pottery, etc. 206
- 70 Watcombe Terra-Cotta Co. (limited), Watcombe, South Devon.—Terra-cotta, painted vases and plaques, statuettes, etc.; frescoes for mural adornment, and architectural terra-cotta specimens. 206
- 71 Brooke, Edward, & Sons, Fieldhouse Fire Clay Works, Huddersfield, Yorkshire.  
 a Sanitary tubes. 206  
 b Fire bricks and clay for furnaces; sewer ventilators; silica fire bricks for furnaces. 207

## Ceramics.

- 72 Stiff, James, & Sons, London.**  
*a* Terra-cotta jars, bottles, tiles, vases, medallions, water filters, refrigerators, air bricks, stoves, and stove linings, tablets with figures in bas-relief, figures for church and other decorations; sanitary ware, sewer traps, drain pipes, etc. 206  
*b* Terra-cotta stoves and stove hinges. 207  
*c* Tiles. 208  
*d* Chemical stoneware, water filters, refrigerators, etc. 210
- 73 Jennings, George, London.**—Appliances for ventilation, terra-cotta bricks, etc.; stoneware drain pipes, gully traps. 206
- 74 Holland, William Thomas, Yrismudw, South Wales.**  
*a* Architectural terra-cotta, bricks and tiles, sanitary pipes and ware. 206  
*b* Fire bricks and fireproof cements. 207  
*c* Ceramic goods, earthenware, or faience, in table, tea and toilet services, etc. 213
- 75 Lindsay & Anderson, Lilliehill Fire Clay & Terra-Cotta Works, Dunfermline, Scotland.**  
*a* Fountain in terra-cotta, bust and pedestal of Sir Walter Scott, statuette of Sir James Y. Simpson, nymphs at fountain, garden vases and pedestals, sewage pipes and sanitary appliances, collection of terra-cotta. 206  
*b* Gas stove in terra-cotta, fire-clay bricks, chimney cans. 207
- 76 Doulton, Hy., & Co., London.**—Terra-cotta goods for architectural purposes; sanitary pottery in salt-glazed stoneware, queensware; vitrified metallic bricks and pavings. 206
- 76a Eastwood & Co., (limited), London.**  
*a* Building, paving, ornamental, and fire bricks; Staffordshire blue bricks, grooved paviers. 206  
*b* Red paving and roofing tiles; ridges and clinkers. 208
- 77 Brownhills Pottery Co., Tunstall.**  
*a* Terra-cotta and black glazed ware. 206  
*b* Floor and roof tiles, ridge ornaments, etc. 208  
*c* Jugs. 210  
*d* Earthenware dinner, dessert, and toilet ware. 213
- 78 Dean, Henry, Rugby, Warwickshire.**—Stoneware drain traps and yard gullies of different patterns. 206
- 78a Maw & Co., Benthall Works, Broseley, Shropshire.**  
*a* Architectural majolica, and terra-cotta. 206  
*b* Geometrical mosaic, encaustic, and majolica tiles. 208
- 79 Tinworth, George, London.**—Panels in terra-cotta, illustrative of Scripture, and articles in colored stoneware. 206
- 79a Daniell, A. B., & Son, London.**  
*a* Porcelain and pottery, ornamental vases, candelabra, etc.; fountains, jardinières, garden seats, vases, etc. 206  
*b* Dinner, dessert, tea, and coffee services; toilet services. 213
- 80 Harper & Moores, Stourbridge.**—Fire clays, prepared clays, fire bricks, crucibles, melting pots, bricks for smelting furnaces, etc. 207
- 81 Cliff, John, Runcorn, near Liverpool.**—Fire brick. 207
- 82 Patent Plumbago Crucible Co., Battersea Works, London.**—Portable furnaces; skittle pots for glass melting; crucibles for jewelers, assayers, dentists, etc.; founders' blacking. 207
- 83 Price, J. & C., & Bros., Bristol.**—Ale bottles, spirit jars, barrels, preserve jars, water filters, feet warmers, etc.; stoneware. 207
- 84 Bates, Walker, & Co., Dale Hall Works, Burslem.**  
*a* Ironmongers', artists', and gardenware; earthenware goods; signboard letters. 209  
*b* Spirit barrels. 210  
*c* Dinner, dessert, toilet, and tea ware; porcelain slates, menu tablets, etc. 213
- 85 Doulton & Co., London.**—Man-tepieces, stoves, hearth, and fenders of clay; crucibles, furnaces, muffles, in fire clay and plumbago. 207
- 86 King Bros., Stourbridge.**—Fire brick, gas retorts, etc. 207
- 88 Davidson, T., jr., & Co., Caledonian Pipe Works, Glasgow.**—Clay tobacco pipes; white clay pipes, fitted with fancy mouthpieces and cases. 207
- 88a Doulton & Watts, Lambeth Pottery, London.**  
*a* Stoneware for chemical works. 207  
*b* Tile decorations. 208  
*c* Stoneware for manufacturing purposes; pulpit and font in fine art pottery faience. 209  
*d* Stoneware for domestic purposes. 210
- 89 The Campbell Brick & Tile Co., Stoke-upon-Trent.**—Encaustic, geometric, majolica, and all kinds of glazed tiles and mosaics, bricks, and roofings. 208
- 90 Craven, Dunill, & Co., Jackfield Works, near Ironbridge, Shropshire.**—Tiles for pavements and hearths; ornamental splay for fireplaces; tiles for walls and furniture. 208
- 91 Minton, Hollins, & Co., Minton's China Works, Stoke on Trent.**—Tiles, tile-mosaic, tile fender, chimney piece, fire grate, flower vases, etc. 208
- 92 Stanley Bros., Midland Tile Works, Nuneaton, Warwickshire.**—Perforated tiles for malt kiln floors. 208
- 93 Brown-Westhead, T. C., Moore, & Co., Caudon Place, Staffordshire Potteries.**  
*a* Tiles and sanitary ware. 206  
*b* China, earthenware, statuary, porcelain, and majolica ware. 209  
*c* Druggists' and perfumers' goods. 210  
*d* Dinner, dessert, and toilet services. 213
- 93a Matthews, Edward, & Son, London.**—Decorative tiles. 208
- 93b Minton China Works, Stoke upon Trent.**—Enameled tiles, etc. 208
- 93c Colthurst, Symons & Co., Bridge-water.**—Bricks and tiles. (*In Agricultural Hall.*) 208
- 94 Brownfield, Wm., & Son, Cobridge, Staffordshire Potteries.**—China, majolica, ironstone china, parian, earthenware, stoneware, etc. 210
- 95 Edwards, J., & Son, Burslem, Staffordshire.**—Ironstone whiteware. (*In Agricultural Hall.*) 210

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 87-95.

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IRELAND.

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Ceramics, Furniture.

- 96<sup>a</sup> Gardner, Peter, Dunmore Pottery, by Stirling, Scotland.—Rockingham teapots. 210
- 97 Edwards, John, Featon, Staffordshire.—Ironstone china and porcelain de terre tea, dinner, toilet, and jug services. (*In Agricultural Hall.*) 213
- 98 Bailey, W. & J. A., Alloa, Scotland.—Rockingham earthenware teapots. 213
- 98<sup>a</sup> Powell & Bishop, Hanley, Staffordshire.—Dinner, dessert, tea, and toilet services, white granite, etc. 213
- 99 Hetley, J., & Co., London.—Glass shades; glass used for photographic, building, and horticultural purposes. 214
- 100 Chance Bros., & Co., Glass Works, near Birmingham.—Glass for optical instruments. 215
- 101 Kilmer Bros., London.—Glass bottles and glass, for useful and scientific applications. 215
- 107 Aire & Calder Glass Bottle Co., London.—Glass bottles, combination stoppers, packing cases, corks, straw envelopes. 215
- 108 Green, James, & Nephew, Thames Cut Glass Works, London.—Table glass, cut and engraved table decorations and flower stands, glass chandeliers, and lustre candlesticks. 216
- 109 Millar, John, & Co., Edinburgh.—Engraved and cut glass. 216
- 109<sup>a</sup> Jenkinson, Alexander, Edinburgh.—Venetian glass in antique shapes. 216

Furniture and Objects of General Use in Construction and in Dwellings.

- 110 Cox & Sons, London.—Chimney piece, embroidered mantel board, ebonized corner cupboard, carved oak furniture, bronze ornament, stained glass church window, wrought iron pulpit body, lecterns, church plate, wrought iron and brass work, art tiles and plaques; the challenge prize of the National Musical Union, etc. 217
- 110<sup>a</sup> Turner, George, & Co., London.  
<sup>a</sup> Hammock, bedstead and sofa, mosquito curtains. 217  
<sup>b</sup> Camp oven. 222
- 111 Wright & Mansfield, London.—Cabinet furniture of the 18th century. 217
- 112 Hems, Harry, Exeter.—Alabaster statue; carved oak chest made out of ancient beams (nearly 600 years old) from the choir of Salisbury cathedral. 217
- 113 Peyton & Peyton, Bordesley Works, Birmingham.—Metallic bedsteads. 217
- 114 Morton, W. Scott, & Co., Art Furniture Works, Edinburgh.—Decorative furniture, ebonized and decorated cabinet, sideboard. 217
- 115 Hart, Son, Peard, & Co., London.  
<sup>a</sup> Artistic metal work (chiefly for ecclesiastical purposes), stove grates, etc. 217  
<sup>b</sup> Stove grates, etc. 222  
<sup>c</sup> Gas fixtures. 223
- 116 Shoolbred, James, & Co., London.—Furniture in the Jacobean and Queen Anne styles; bedroom furniture in the Anglo-Indian style; curtains and carpets. 217
- 116<sup>a</sup> White, William George, London.—Steel safe. 217
- 117 Barnard, Bradly, London.—Furniture and hammock. 217
- 118 Cooper & Holt, London.—Furniture, sideboard, portion of bedroom suite, decorative drawing-room furniture. 217
- 119 Phipson, Miss Emma, Monk Sherborne, Basingstoke, Hants.—Sideboard, ladies' work table, dressing glass, and candlesticks. 217
- 119<sup>a</sup> Chatwood, Samuel, London.—Fire and burglar proof safes. 217
- 120 Ward & Co., London.—Bear arranged as dumb waiter to hold tray and lamp. 217
- 122 Arthur, Frederick, London.—Cabinet work and fittings for Royal School of Art needlework exhibits. 217
- 123 Wethered, Edwin Robert, Woolwich, Kent.  
<sup>a</sup> Hammock. 217  
<sup>b</sup> Friction pulley block, exhibited as a fire-escape. 227
- 124 Matthews, Edward, & Son, London.—Stained glass windows, mural brasses. 217
- 125 Barnard, Bishop, & Barnards, Norfolk Iron Works, Norwich.  
<sup>a</sup> Stoves. 222  
<sup>b</sup> Mangles. 225  
<sup>c</sup> Ornamental wrought and cast iron gates, palisade, pavilions, etc. 220  
<sup>d</sup> Lawn mowers, hose reels, garden rollers, and iron garden requisites. 220
- 125<sup>a</sup> Howard & Sons, London.—Household furniture. 217
- 126 Singer, J. W., & Son, Frome, Somerset.—Artistic metal work, altar crosses and candlesticks, alms dishes, and mural brass plates for churches. 217
- 126<sup>a</sup> Sage, Frederick, London.—Air-tight show cases, velvet show stand, etc. 217
- 127 Knight, Miss Mary, London.—Bedstead. 217
- 128 Jeffreys, Charles, London.  
<sup>a</sup> Show cases, bronzed shop fittings, and show stands. 217  
<sup>b</sup> Cut glass mirrors. 219  
<sup>c</sup> Reflecting lamps. 223
- 129 Royal School of Art Needlework, London.—Artistic needlework and embroidery in applique, crewels, and silk. 217
- 130 MacIntosh, James, London.—Decorative doors and panels; imitations of woods and marbles, decorative designs and paper-hanging. 217
- 130<sup>a</sup> Collmann, L. W., London.—Piano in carved satinwood case, etc. 217
- 130<sup>b</sup> Watson & Son, Bombay, East India.—Indian furniture, etc. 217
- 131 Collinson & Lock, London.—Furniture, wall papers, and textile fabrics in the old English style. 217
- 131<sup>a</sup> Neal, John, London.—Table ware. 218
- 132 Goggin, Jeremiah, Dublin.  
<sup>a</sup> Table ornaments, drinking cups, tankards, etc. 218  
<sup>b</sup> Mirrors. 219

## Table Furniture, Heating and Lighting Apparatus, Woven Goods.

- 133 Bailey, W. & J. A., Alloa, Scotland.—Engraved table glass. 218
- 133a Gill, James, London.—General engraving on metals, etc. 218
- 134 Elkington & Co., Birmingham.  
 a Solid silver and electro-silver plate for domestic use; decorative table plate relieved with electro-gold and oxidized silver. 218  
 b Cloisonné and champlevé enamels on silver and copper. 413  
 c Works of art in gold, silver, and other metals; bronzed statuary. 443  
 d Antique art treasures in metal, from the South Kensington Museum. 454
- 137 Kent, George Barton, & Co., London.  
 a Ivoride mirrors. 219  
 c Photograph stands. 220
- 138 Engert, A. C., & Co., London.—Ornamental mouldings for picture frames and architectural decorations. 220
- 139 Hieronimus, W., London.—Frame mouldings, window cornices, decorating mouldings, etc. 220
- 140 Heaps & Wheatley, Brotherton, Yorkshire.—Oil cooking stove, gas stove, water boilers, etc. 222
- 142 Steel & Garland, Wharfedale Works, Sheffield.—Steel grates, with porcelain tiles; fenders, encaustic tile hearths, stoves with china tiles, fire irons, etc. 222
- 144 Smart, Walter, Buckhurst Hill, Essex.—Sub-fire oven. 222
- 146 Feetham, Mark, & Co., London.—Stoves and grates with appliances; decorated china for fireplaces. 222
- 147 Perkins, A. M., & Son, London.—Steam oven for marine use. (*In Machinery Hall.*) 222
- 148 Thoratton, Ebeneser, Bradford, Yorkshire.—Cooking stove for gas or solid fuel. 222
- 148a Clay, Randolph, London.—Flexible gas tubing. 223
- 149 Gardner, John, & Sons, London.—Lamps, Arctic expedition lamps, traveling canteens. 222
- 150 Field, J. C. & J., London.—Night lights and candle guard. 223
- 151 Partridge & Co., Birmingham.—Brass gaseliers, brackets, etc. 223
- 152 Skelton & Co., London.—Street lamp, with reflectors. 223
- 152a Kent, George, London.—Knife-cleaning machine. 224
- 153 Etsenberger, R. Z., London.—Patent coffee filter, etc. 224
- 153a Cheavin, George, Boston, Lincolnshire.—Water filters. (*In Agricultural Hall.*) 226
- 154 Jennings, George, London.—Lavatories, baths, closets, urinals, and latrines; water meters and water waste preventors. 226
- 155 Bullivant, Thomas, London.—Sash window. 227
- 156 Edwards, G., London.—Sliding window sashes and frame. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 157 Brown, J. B., & Co., London.—Galvanized wire netting for inclosing poultry, pheasants, dogs, etc. (*In Agricultural Hall.*) 228
- 157a Engert & Rolfe, London.—Felts for roofing, fibrous asphalt, etc. (*In Agricultural Hall.*) 235
- 158 Greening, N., & Sons, Warrington.—Woven wire. (*In Agricultural Hall.*) 228
- 158a McTear & Co., Belfast, Ireland.—Roofing, ship sheathing, and inodorous felt; model of roof. 228
- 159 Cox Bros., Camperdown Linen Works, Dundee, Scotland.—Jute yarns, twines, etc. 229
- 160 Sandeman, Frank Stewart, Manhattan Works, Dundee, Scotland.—Linen and jute yarns, carpet yarns, burlaps, baggings, canvas padding, scrim cloth, horse covers, and lap robes. 230
- 161 Laird, William, & Co., Canmore Linen Works, Forfar, Scotland.—Textile fabrics, washed damasks, fancy towings, horsecloths, sheetings, osenaburgs, stair covering, seamless bags, hessians, striped beddings, padding, ducks, buckram, etc. 230
- 162 Johnson, Jabez, & Fildes, Manchester.  
 a Quilts and bedcovers, toilet or bureau covers, brocades, damasks, dimities, muslins. 230  
 b Printed cretons, towels, dress fabrics, etc. 232
- 163 Dewhurst, John, & Sons, Belle Vue Mills, Skipton, Yorkshire.—Sewing cotton, finished and in various stages of manufacture. 230
- 164 Brook, Jonas, & Bros., Meltham Mills, Huddersfield.—Spool cotton, white and colored; crochet and embroidery cotton. 230
- 164a Greenmount Spinning Co., Greenmount Factory, Dublin.  
 a Cotton goods for domestic and clothing purposes. 230  
 b Linen goods. 233
- 165 Neilson, Storer, & Sons, Thorna Mills, Johnstone, near Paisley.—Yarns; knitting, mending, and other cottons; yarns for lace, curtain, and fancy dress manufacturers. 230
- 165a McBride, Robert, & Co., Belfast.  
 a Cotton goods. 230  
 b Mixed cotton and linen goods. 233
- 166 Clark, John, jr., & Co., Glasgow, Scotland.—Spool cotton. 230
- 167 Swainson, Birley, & Co., Fishwick Mills, Preston.—Bleached cotton fabrics. 230
- 167a Turner, George, & Co., London.—Tent. 230
- 168 Barlow & Jones (limited), Manchester.—Toilet quilts, covers, and mats; cloakings, cotton towels, blankets, alhambras, and counterpanes, plain and fancy muslins, etc. 230



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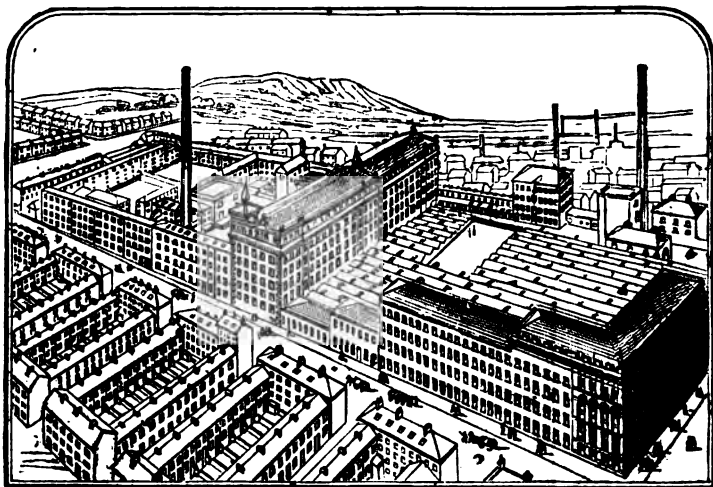
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## Woven Goods.

- 168a Briggs, J. F., & Co., Huddersfield, Yorkshire.—Drills and ducks. 230
- 169 Ashworth, Edmund, & Sons, Egerton Mills, Bolton, Lancashire.—Cotton in various stages of manufacture: yarns, sewing cottons; crochet, embroidery, knitting, mending, and glove cottons, linen finish thread. 230
- 170 Pearson, Thomas, & Son, Victoria Mills, Little Bolton.—Quilts, quiltings, toilet covers, and mats. 230
- 171 Hawkins, John, & Sons, Manchester.—Plain and twilled calicoes and prints. 232
- 172 Ferguson Bros., Holme Head Works, near Carlisle.—Sateens. 232
- 173 Schwabe, Salls, & Co., Manchester.—Cotton prints for garments, chintzes, and furniture. 232
- 174 Simpson & King, Manchester.—Printed cotton furniture fabrics. 232
- 175 Marshall & Co., Leeds.—Linen sewing threads. 233
- 176 Normand, James, & Sons, Dysart, Fifehire, Scotland.—Linen for house-keeping, shoe linings, etc. 233
- 177 Ewart, William, & Sons, Belfast, Ireland.—Linen fabrics. 233
- 178 The York Street Flax Spinning Co. (limited), Belfast.—Linen piece goods, drills, ducks, sheetings, shirtings, and frontings. 233
- 179 Matier, Henry, & Co., Belfast.—Bleached and printed linens; handkerchiefs, plain, hemstitched printed, and embroidered. 233
- 180 Ainsworth, Thomas, Cleator Mills, Cleator, Cumberland.—Linen threads and towels. 233
- 181 Ullathorne & Co., London.—Shoe and saddlers' threads. 233
- 182 Fenton, Connor, & Co., Linen Hall, Belfast.—White linens, cambric, table linens, linen ducks, drills, etc.; printed shirtings and lawn dress goods. 233
- 183 Brown, John S., & Sons, Belfast.—Table linen, diapers, sheetings, shirting linen, lawns, linen and cambric handkerchiefs. 233
- 184 Richardson, J. N., Sons, & Owden, Belfast.—Linen goods. 233
- 185 Dicksons, Ferguson, & Co., Belfast.—Linen bleached and unbleached. 233
- 186 Dunbar, McMaster & Co., Gilford, Ireland.—Linen threads. 233
- 187 Nairn, Michael, & Co., Kirkaldy, Scotland.—Floor oil cloths. 234
- 188 Corticene Patent Floor Covering Co., London.—Floor covering. 234
- 189 Hall, Thomas, Edinburgh.—Hand painted cloths in imitation of tapestry, for wall decoration. 234
- 190 Wellock, J., & Co., Bradford, Yorkshire.—Waterproof materials for cart and wagon covers. 234
- 195 Boulton Floor Cloth Manufacturing Co. (limited), Manchester.—Floor cloth. 234
- Woven and Felted Goods of Wool, etc.**
- 196 Andrews, Henry, & Co., Leeds.—Worsted coatings, wool and union cloths, and wool meltons. 235
- 197 Brown, John S., & Sons, Belfast.—Yarns. 235
- 198 Hooper, Charles, & Co., Eastington Mills, Stonehouse, Gloucestershire.—Woolens, broadcloths, military cloths, doeskins, beavers, elysians, kerseys, meltons, coatings, and trowerings. 235
- 199 Salter, Samuel, & Co., Home Mills, Trowbridge, Wiltshire.—Trowerings and coatings. 235
- 200 Dunbar, McMaster, & Co., Gilford, Ireland.—Gray and bleached yarns. 235
- 201 Mahony, Martin, & Bros., Blarney, Ireland.—Tweeds, boating serge, worsted coatings, railway traveling wraps. 235
- 202 Anderson, David, & Son, Lagan Felt Works, Belfast, Ireland.—Roofing, flooring, and ship sheathing felt, lining felt, hair felts for covering boilers and steam pipes. (*In Machinery Hall.*) 235
- 203 Biles, William, & Son, Chipping Norton, Oxon.  
a Tweeds, woolen serges, and saddlers' woolens. 235  
b Shawls. 237  
c Mauds and rugs. 239
- 204 Brigg, J. F., & Co., Huddersfield, Yorkshire.—Beavers, coatings, chevrot, cassimeres, carriage and livery cloths, doeskins, elysians, meltons, kerseys, pilots, rugs, vestings and quiltings, velvets, union cloths, witneys, and reversible coatings. 235
- 205 Carr, Isaac, & Co., Twerton Mills, Bath.—Woolen cloths, meltons, twills, beavers. 235
- 206 Bubb & Co., Southfields Mills, near Stroud.—Woolen cloths; billiards, government, and piano cloths. 235
- 207 Marling & Co., Ebley and Stanley Mills, Stroud, Gloucestershire.—Raw, scoured, and dyed wool; woolen cloths, beavers, venetians, doeskins, deerskins, cassimeres, etc. 235
- 208 King, William, Gilroyd and Albert Mills, Morley, Leeds.—Union and melton cloths. 235
- 209 Birchall, J. D., & Co., Burley Mills, Leeds.—Woolen and worsted goods. 235
- 211 Hargreaves & Nusseys, Rarnley Low Mills, Leeds.—Coatings, overcoatings, kerseys, meltons, woolen cloths. 235
- 212 Davies, Robert S., & Sons, Stonehouse Mills, Gloucestershire.—Cloths, doeskins, venetians, meltons, coatings, beavers, etc. 235
- 214 Little, T. W., & Co., Leeds.—Mantle cloths, waterproof tweeds, twills, meltons, blue and black deerskins, and diagonals. 235

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- 215** Jones, Pryce, Newtown, North Wales.  
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 b Shawls. 237
- 216** Buckley, Joseph, & Co., Moorcroft Mills, Delph, near Manchester.—Shawls, raised fancies, Rob Roys, and shepherds. 237
- 217** Farmer & Rogers, London.—Cashmere shawls. (*In Indian Section.*) 237
- 218** Buckley, J. E. & G. F., Linotts Mill, Delph, near Manchester.—Queensland and beaver shawls. 237
- 218a** Hepworth, B., & Sons, New Wakefield Mills, Dewsbury, Yorkshire.  
 a Railway knee wrappers. 237  
 b Rugs. 239
- 218b** McGee, John G., & Co., Belfast, Ireland.  
 a Traveling wraps, shawls, etc. 237  
 b Rugs. 239
- 219** Williams, E. G., & Co., Bradford, Yorkshire.—Textile fabrics for dress goods. 238
- 220** Pim Bros. & Co., Dublin.—Irish poplins, silk terries, and brocatelles. 238
- 221** Henderson & Co., Durham.—Durham axminster. 239
- 222** Lewis, John, Halifax, Yorkshire.—Brussels and Wilton carpets. (*British Office.*) 239
- 223** Gregory & Co., London.—Indian and Persian carpets. 239
- 224** Robinson, Vincent, & Co., London.—Carpets and rugs. 239
- 225** Crossley, John, & Sons (limited), Dean Clough Mills, Halifax, Yorkshire.—Carpets, rugs, sofa carpets, table covers, etc. 239
- 226** Tomkinson & Adam, Kidderminster.—Axminster carpets. 239
- 227** Lapworth Bros., London.—Carpets and rugs. 239
- 228** Templeton J. & J. S., Glasgow.—Brussels and Wilton carpeting; silk and wool window curtains. 239
- 228a** Welch, Margetson, & Co., London.—Rugs. 239
- 229** Templeton, James, & Co., Glasgow.—Axminster carpets, breadth carpeting, hearth rugs. 239
- 229a** Tapling, Thomas, & Co., London.—Tapestry. 239
- 230** Webb, Edward, & Sons, Worcester.—Hair cloth for furniture covering, hair cloth paddings, curled hair, crinoline, hair cloth. 240
- 230a** McLintock, James, & Sons, Barnsley, Yorkshire.—Down quilts and pillows. 240
- 231** Wild, John, Greenfield Mills, Shaw, near Oldham.—Cotton plush velvet. 231

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- 233** Rickards, Charles Ayscough, Bell Busk Mills, near Leeds.—Sewing and machine silks, twists; embroidery, knitting, and crochet silks. 243
- 234** Milner, Wm., & Sons, Leek, Staffordshire.—Sewing silks. 243
- 235** Ward, Anthony, & Co., Albion Silk Mills, Leek, Staffordshire.—Silk threads. 243
- 236** Adams & Co., London.—Knitting silks, filocelle. 243
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- 238** Norris & Co., London.—Silk for furniture and upholstery purposes. 246
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- 239b** Welch, Margetson, & Co., London.—Scarfs, ties, and silk handkerchiefs. 247
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- 241** Heymann & Alexander, Nottingham.—Nets, quillings, trimmings, etc. 249
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 b Umbrellas. 254
- 248** Sykes, Josephine, & Co., London.—Corsets and ladies' belts. 250
- 249** Hitchcock, Williams, & Co., London.—Costumes of mixed fabrics. 250
- 250** McGee, John G., & Co., Belfast, Ireland.—Ulster overcoats and Irish homespun goods. 250
- 250a** Connor, Mrs., Dublin.—Patchwork quilt. 250

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Damasks; Table Napkins; Diapers; Handkerchiefs; &c., &c., &c.

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Clothing, Jewelry, Fancy Goods.

- 251 Smyth & Co., Balbriggan, Ireland.—Balbriggan hosiery, lace hose, light stockings. 250
- 251a Turner, George, & Co., London.—Military and traveling equipments; appliances for picketing horses. 250  
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- 275 Johnson, J., & Co., Charterhouse Works, Sycamore street, London.—Shell boxes, toy furniture and ornaments, and fancy paper boxes. 254
- 276 Davis & Wilson, Birmingham.—Whip, walking-stick, and umbrella mountings; African chiefs' canes; whips and general whip materials. 254
- 277 Millward, Henry, & Sons, Redditch.—Needles, sewing machine needles, fishhooks. 254
- 278 Turner, R., & Co., Old Factory, Redditch.—Needles, pins, fishhooks, etc., displayed in a glass case, forming model of the exhibition of 1851. 254
- 279 Swaine & Adeney, London.—Whips, whip lashes, thongs, and sockets; horns, canes, and walking-sticks; sporting apparatus. 254
- 280 Smith, John Wright, Leicester.—Self-acting needles used in hosiery frames. 254
- 281 Kent, George Barton, & Co., London.—Ivory paper knives and shoe lifts. 254
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- 284 Kirby, Beard, & Co., Birmingham.—Pins, needles, hairpins, fishhooks, etc. 254
- 284a Elrick, Charles Gray, Aberdeen, Scotland.—Dressing combs; real and imitation shell, side braid, and high Spanish combs, etc. 254
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- 286 Smith, James, & Son, Astwood Bank, near Redditch.—Needles, showing stages of manufacture; bodkins, hairpins, and fancy cases for holding needles. 254
- 287 Hayes, Crossley, & Co., London.—New shape sewing needles, machine needles, pins, bodkins, and specimens in various stages of preparation. 254
- 288 Cooke Bros., Birmingham.—Safety pins, curtain hooks, and fancy nails. 254
- 289 Woodfield, William, & Sons, Easemore Works, Redditch.—Needles, sewing machine needles, fishhooks, etc.; sail tools and fancy needle cases. 254
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- 306 Ford Works Co., Ford, Durham.—Paper stock, manufactured from esparto grass; products from esparto, bamboo, megasse, phormium tenax, maize, and other fibres. 259
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- 308 Pirie, Alexander, & Sons, London.  
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- 316 Greener, William Wellington, Birmingham.—Sporting guns and rifles; breechloading guns. 265

- 317 Rigby, John, & Co., Dublin.—Guns and rifles and their accessories. 265

- 318 Henry, Alexander, Edinburgh.—Breechloading express rifles, fowling-pieces, harpoon and bomb-lance guns; military arms and target rifles. 265

- 319 Clay, Randolph, London.—Converter for breechloading firearms. 265

- 320 Dougall, James Dalziel, Glasgow.—Long-range shotguns and rifles. 265

- 322 Lancaster, Charles, London.—Guns, rifles, cannon; drawings and models of the oval bored. 265

- 323 Scott, W. & C., & Sons, Premier Gun Works, Birmingham.—Sporting firearms, revolvers, gun materials. 265

- 324 Needham, J. & G. H., London.—Breechloading double guns. 265

- 325 Purdey, Jas., London.—Guns, rifles, etc. 265

- 326 Lancaster, Alfred, London.—Sporting guns and rifles. 265

- 327 Soper, William, Reading.—Rifles. 265

- 328 Lang, J., & Sons, London.—Guns and rifles. 265

- 328a Eley Bros. (limited), London.—Paper and metal cartridge cases (empty), sporting and military percussion caps, gun waddings. 265

- 329 Webley, P., & Son, Birmingham.—Sporting breechloading guns, rifles, and revolvers. 265

- 329a Hewitt, William, Bristol.—Breechloading gun, gun carriage. (See Machinery Hall). 266

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- 333 Buchanan, James, Glasgow.—Sea fishhooks. 269

- 334 Ryder, William Henry, Birmingham.—Fishing tackle. 270

- 335 Green, E. C., Cheltenham.—Sporting guns, with their appurtenances; cleaning rods, with attachments; cartridge-loading implements, nipple keys, gun cases and bags. 269

- 336 Tolley, J. & W., Pioneer Works, Birmingham.—Sporting breechloading shot guns, implements, cartridge cases, lubricators, bullets, and primets for reloading cartridges. 269

- 337 Williams & Powell, Liverpool.—Breechloading guns. 269

## Medicine, Surgery, and Prothesis.

- 338 Allen & Hanbury, London.—Cod-liver oil; gelatine impregnated with atropine and calabar bean, for application to the eye. 272



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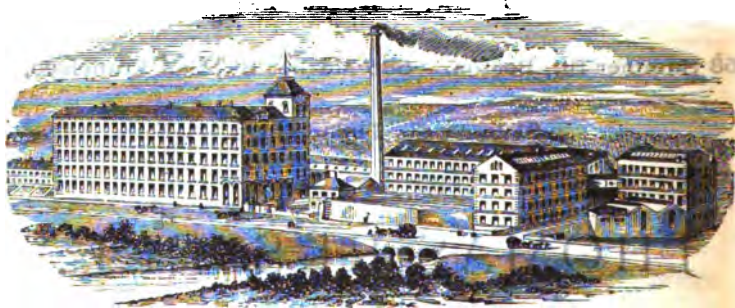
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Medical and Surgical Appliances, Hardware, Cutlery, Vehicles.

339 Gerrard, Alfred William, London.—Mustard plasters. 272

340 Evans, Sons, & Co., Liverpool.—Vegetable, animal, and mineral drugs; pharmaceutical products and accessories. 272

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344 Goodall, Beckhouse, & Co., Leeds.—Food for infants and invalids. 273

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348 Lee, Robert James, London.—Steam draft inhaler and disinfecter. 276

349a Haywood, J. S., Nottingham.—Surgical bandages, belts, trusses, etc. 276

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359e Needham, John, Sheffield.—Cutlery. 281

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<i>Surplus</i> . . . . .	<i>224,317.95</i>
<i>Total Assets</i> . . . . .	<i>\$424,327.95</i>

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## NEW ZEALAND.

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## Manufactures, Education and Science.

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- 24 Cook, James, Nelson.—Mats and matting made from *phormium*. 287
- 25 Simons & Malcolm, Nelson.—Door mats made from *phormium*. 287

## Institutions and Organizations.

- 26 Colonial Museum, J. Hector, Director.—Garments and ornaments of the Maoris. 312
- 27 National Museum at Washington, J. Henry, Secretary.—Garments of the Maoris. 312
- 27a New Zealand Commissioners.—Weapons of the Maoris. 312

## Engineering, Architecture, Maps, etc.

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- 29 Geological Survey Department, James Hector, Director.—Geological plans and sections. 335
- 30 Canterbury Museum, J. von Haast, Director.—Geological plans and sections. 335
- 31a Hector, J.—Relief Model of New Zealand, geologically colored. 335
- 32b Government of New Zealand.—Topographical map of the colony, engraved by E. Ravenstein. 335

## Physical, Social, and Moral Condition of Man.

- 33 National Museum, Washington, J. Henry, Secretary.—Canoe paddles of Maoris; skulls of Maoris and Moriori from the Chatham Islands. 340

## Education and Science, Art, Agriculture.

- 34 Woon, R. W., Wanganui.—Canoe paddles of the Maoris. 340
- 35 Government of New Zealand.—Statistics and census of New Zealand for 1874, prepared by W. R. E. Brown, Registrar-General. 345
- 35a Hector, J.—Transactions and Proceedings of the New Zealand Institute, Vols. I. to VII. 345
- 35b Vogel, Sir Julius.—Hand-book of New Zealand. 345

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- 35c Geological Survey Department, James Hector, Director.—Water color sketches by W. M. Cooper. 411

## Engraving and Lithography.

- 35d New Zealand Commissioners.—Pictures from W. L. Buller's "Birds of New Zealand," drawn by J. H. Keulemans. 422

## Photography.

- 36 Burton Bros., Dunedin.—Views of scenery of South Island. 430
- 36a Bothamley, A. T.—Photographs of Maoris. 430
- 37 Government of New Zealand.—Views of scenery, etc., by H. Deverill. 430
- 38 Taranaki Committee.—Views of New Plymouth and surrounding country. 430
- 38a Hector, J.—Photographs exhibiting domestic life of the Maoris. 430
- 39 Mundy, D. L.—Views of scenery, foliage, buildings, gold mining, etc. 430

## Railway Plant, Rolling Stock, etc.

- 40 Government of New Zealand.—Photographs of engines and engineering works used in New Zealand. 570

## Arboriculture and Forest Products.

- 41 Cruickshank, J. D., Upper Hutt Saw Mills, Wellington.—Section of trunk of rimu (*Dacrydium cupressinum*), red pine of settlers. 600
- 42 Westland Committee.—Specimens of woods with bark. 600
- 43 Taranaki Committee.
- a Specimens of woods. 601
  - b Barks of the Atawhero and the Pukatea; earth used by the Maoris as a mordant for dyes. 602
  - c Dried ferns; fungus exported as food to China; esculent fern root; birds' nest fungus and curious parasite. 604
- 44 Black, W. B., American Coach Factory, Wellington.—Specimens of woods. 601
- 45 New Zealand Commissioners.—Specimens of woods. 601
- 46 Grayling, W. S., Taranaki.—Bark of hinau; blue earth, used by the Maoris, mixed with shark oil, as blue paint. 602

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 47 Colonial Museum, Wellington, James Hector, Director.—Tanbarks, native to New Zealand. 602

- 49 Walker, Renwick & Co., New York.—Kauri gum. 603

- 50 Forbes, R. W., New York.—Kauri gum. 603

## Agricultural Products.

- 51 Banks, E. H., Christchurch.—Oats and other cereals. 600
- 52 Wood, W. D., Christchurch.—Wheat. 600
- 53 Cunningham, P., & Co., Christchurch.—Wheat grown in Canterbury. 600
- 54 Ruddenklau, J. G., Addington, Canterbury.—Wheat. 600
- 55 Hooper & Dedson, Nelson.—Hops. 603
- 56 Wilkin, Robert, Christchurch.—Perennial rye grass and cocksfoot seed. 604
- 57 Armstrong, J. B., Christchurch.—Phormium seeds. 604

## Animal and Vegetable Products.

- 58 Wilson, Thomas, Woolston, Canterbury.—Saddle, harness, and shoemakers' leather; fancy colored skins for shoemakers and bookbinders. 652
- 59 Armitage, Taranaki.—Dressed kip and calf leather. 652
- 60 Morris, Thomas, Oamaru, Otago.—Gentleman's town saddle. 652
- 61 National Museum, Washington, J. Henry, Secretary.
- a Specimens of kiwi; skeleton and bones of moa. 652
  - b Egg of the kiwi, and model of egg of moa. 653
- 62 Gilmour, John, Christchurch.—Hams and bacon. 656
- 63 New Zealand Provision & Produce Company, Christchurch.—Preserved meats. 656
- 64 Nairn, David, Addington, Canterbury.—Tomato sauce. 656
- 65 Trent Brothers, Woolston, Canterbury.—Chicory in different stages of preparation. 657
- 66 Smith, James, Nelson.—Fruit wines. 660
- 67 Henderson & Farrah, Wanganui.—Ale and porter. 660

## Horticulture.

- 68 Coates, Laning, Christchurch.—Live ferns. 707



## NEW SOUTH WALES.

(North of Nave, Columns 10 to 17.)

## Manufactures, Education, Art.

## Chemical Manufactures.

- 1 Read, R. B., Randwick.—Extract, leaves, and berries of Smilacis glycyphylla, or Australian sarsaparilla. 200
- 2 Barrett & Co., Sydney.—Aerated waters and cordials. 200
- 3 Gihroy & Huret, Sydney.—Baking, custard, egg, and butter powders. 200
- 4 Hunt, A. M., & Co., Goulburn.—Baking powders. 200
- 5 Swain & Co., Parramatta.—Washing fluid and soap. 201
- 6 New South Wales Shale & Oil Co., Sydney.—Kerosene oil, etc. 201
- 7 New South Wales Commissioners, Sydney.—Stearine candles. 201
- 8 Layton, Fred., Grafton, Clarence river.—Soap and candles. 201
- 9 Underwood, Thomas, Paddington.—Paints and paint pigment. 202
- 10 Hoff, M. Camille, Nakutakiana, New Caledonia.—Indigo. 202

## Ceramics—Pottery, Porcelain, Glass, etc.

- 11 New South Wales Commissioners.—Churns, jars, etc. 210

## Furniture, etc.

- 12 Lyons, Cottler, & Co., Sydney.—Stained glass staircase window—subject, "Captain Cook." 219
- 13 Hudson Brothers, Steam Joinery Mills, Sydney.—Window sashes, outside hall door, inside four-panel door, drapery panel door, French casements, cedar table legs. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 14 Read, John Cecil, Darlinghurst, Sydney.—Mass and mering made of cocoa fibre yarn, by aborigines of New South Wales and Fraser's Island. 229
- 15 Rudder, E. W., Kempey.—Lincas. 233

## Woven and Felted Goods of Wool, etc.

- 17 New South Wales Commissioners.—Tweeds. 235  
Shaw. 237
- 18 Jennings, P. A., Sydney.—Rug of tanned platypus skin. 239
- 19 New South Wales Commissioners.—Wallaby skin rug. 239

## Clothing, Jewelry, and Ornaments, Traveling Equipments.

- 20 Jennings, P. A., Sydney.—Collaret and cuffs of platypus skin. 250
- 21 Midgley, Mrs., Cook's River.—Wool flowers, copied from Australian native flowers. 254
- 22 Layton, Fred., Grafton.—Furs and skins of opossum, kangaroo, wallaby, and platypus. 256

## Paper, Blank Books, and Stationery.

- 23 Government Printing Office, Sydney.—Blank books and printing. 261

## Medicine, Surgery, Prothesis.

- 24 Spencer, John, Sydney.—Mechanical dentistry. 277

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 25 New South Wales Commissioners, Sydney.—Brushware. 286
- 26 New South Wales Commissioners, Sydney.—Manila rope, New Zealand flax rope, and lines. 287
- 27 Green, R., Sydney.—Cradles, flower stand, chair, perambulator; cane and willow work. 289

## Carriages, Vehicles, and Accessories.

- 28 John Robertson, Sydney.—Buggy. 292
- 29 New South Wales Commissioners.—Lady's side saddle. 296
- 30 New South Wales Commissioners, Sydney.—Saddlery. 296

## Educational Systems, Methods, and Libraries.

- 30a Government Printing Office, Sydney.—Books. 306
- 30b Sutherland, George.—Christian psychology. 306
- 30c Australian Museum.—Collection of birds, animals, etc. 312
- 30d New South Wales Commissioners.—Collection of birds. 312

## Photography.

- 30e New South Wales Commissioners.—Photographs. 430
- 30f Holtermann, B. O.—Photographs. 430
- 30g Barnet, James.—Photographs. 430
- 30h Richards, Thomas.—Photo-lithographs. 430

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Forest and Agricultural Products, Animal and Vegetable Products.

## Arboriculture and Forest Products.

- 31 Macarthur, Sir W., assisted by Hill & Hanrahan & J. Hassell.—Woods of southern districts. 600
- 32 Moore, Charles.—Woods indigenous to the northern districts. 600
- 33 Shoober, James, Sydney.—Iron bark and turpentine timber. 600
- 34 Derapas, W., Yonngara Station.—Boree, and straight and curly yarran timber. 600
- 35 Hodgson, George, Redfern.—Timber from Melling river. 600
- 36 Penzer, J., Bundamar, near Dubbo.—Timber. 600
- 37 Du Faur, E., Sydney.—Timber from Mount Victoria. 600
- 37a New South Wales Commissioners.—Woods indigenous to New South Wales. 600
- 38 Hudson Bros, Botany Road, Redfern.—Timber. 600
- 39 Derapas, R., Yonngara.  
a Yarran gum. 603  
b Quondong nuts. 605
- 40 Harling, Mrs., & H. H. Field, Sydney.—Pressed ferns. 604
- 41 Moore, Charles, Botanic Gardens, Sydney.—Seeds, ginger-root, and bitter bark. 605
- 42 Hemmings, F. W., Loma Loma, Fiji.—Dried coconut. 605
- 43 Ryder Bros, Mango Island, Fiji.—Dried coconut. 605

## Agricultural Products.

- 44 Lovegrove, W., Terrara, Shoalhaven river.—Maize. 620
- 45 Ryder Bros, Mango Island, Fiji.  
a Maize. 620  
b Beans. 621  
c Turmeric and turmeric powder. 622
- 46 Peden, M. J., Bega.—Maize. 620
- 47 Demestre, E., Shoalhaven.—Maize. 620
- 48 Eggins, James, Grafton, Clarence river.—Maize. 620
- 49 Blain, C. R., Grafton, Clarence river.—Maize. 620
- 50 Macarthur, Sir W.—Maize. 620
- 51 Lewis Bros., Tamworth.—Wheat. 620
- 52 Dalton Bros., Orange.—Wheat. 620
- 53 Nelson Bros., Orange.—Wheat. 620
- 54 Jaaschke, Gustave, Clarence river.—Cigars and tobacco leaf. 623
- 55 Schweigart, W., & Co.—Cigars. 623
- 56 Muirhead, R., Grafton, Clarence river.—Cigars. 623
- 57 Hoff, M. Camille, Nakutakina, New Caledonia.—Coffee. 623

## Land Animals.

- 59 Jennings, P. A., Sydney.—Stuffed platypus. 637

## Water Animals, Fish Culture and Apparatus.

- 60 Hemmings, F. & W., Loma Loma, Fiji.—Bêche de mer. 643

## Animal and Vegetable Products.

- 61 Secombe, R., Milton, Ulladulla.—Preserved milk. 651
- 62 Wright, Davenport, & Co., Sydney.—Leather. 652
- 63 Forsyth, J., & Sona, Sydney.—Leather. 652
- 64 Alderson & Sons, Sydney.—Leather. 652
- 65 Bell, H., Sydney.—Tallow and neat's-foot oil. 652
- 66 Hewitt, T. G., Grafton, Clarence river.—Tallow and neat's-foot oil. 652
- 67 Berry, J. S., Botany, Sydney.—Neat's-foot oil and glue. 652
- 68 Layton, Fred., Grafton, Clarence river.—Beeswax. 654
- 69 Sydney Meat Preserving Co., Sydney.—Preserved meats. 656
- 70 Squires, Elam, Penrith.—Preserved fruits, jams, and jellies. 656
- 71 Hoff, Camille, Nakutakina, New Caledonia.—Preserved pineapples. 656
- 72 Biddell Bros, Sydney.—Preserved lemons and oranges. 656
- 73 Moore, Charles, Botanic Gardens, Sydney.—Preserved lemons and oranges. 656
- 74 Watson Bros., Young.—Flour. 657
- 75 Lewis Bros., Tamworth.—Flour. 657
- 76 Cohen & Levy, Tamworth.—Flour. 657
- 77 Dalton Bros., Orange.—Flour. 657
- 78 Nelson Bros, Orange.—Flour. 657
- 79 Waters, James, Ravensdale, Brisbane Water.—Arrowroot. 658
- 80 Cole, W., & Son, Tomago, Hunter river.—Arrowroot. 658
- 81 Laurie, W. & L., Gloucester, Port Stephens.—Arrowroot. 658
- 82 Ryder Bros., Mango Island, Fiji.—Arrowroot. 658
- 83 Payne, George, Grafton, Clarence river.—Arrowroot. 658
- 84 Champion, George, Ulmarra, Clarence river.—Arrowroot. 658
- 85 Munn, A. L., Merimbula.—Maizena. 658
- 86 Colonial Sugar Refining Co.—Refined sugars. 659
- 87 Martin, George, Grafton, Clarence river.—Sugar. 659
- 88 Chowne, E. G., Ulmarra, Clarence river.—Sugars. 659
- 89 Biddell Bros., Sydney.—Confectionery. 659
- 90 New South Wales Co., Clarence river.—Raw sugars. 659
- 91 Fallos, James T., Albury.—Wines. 660
- 92 Munro, A., Bebeah, Singleton.—Wines. 660

## Vegetable Products, Textile Substances.

- |  |   |
|--|---|
| 93 Carmichael, G. L. & J. B., Porphyry, Williams river.—Wines. 660 | 107 <sup>c</sup> Tindal, E. & A.—Wool. 667      |
| 94 Brecht, Carl J. P., Rosemount, Denman.—Wines. 660               | 107 <sup>f</sup> Clive & Hamilton.—Wool. 667    |
| 95 Powell, Edward, Richmond.—Wines. 660                            | 107 <sup>g</sup> Bettington, J. B.—Wool. 667    |
| 96 Parnell, Montague, West Maitland, Hunter river.—Wines. 660      | 107 <sup>h</sup> Loder, Andrew.—Wool. 667       |
| 97 Wyndham, Wadham, Bukkulla, Inverell.—Wines. 660                 | 107 <sup>i</sup> King, P. G.—Wool. 667          |
| 98 Wyndham, George, Brantxon, Hunter river.—Wines. 660             | 108 Ramsay, D., Sydney.—Wool. 667               |
| 98 <sup>a</sup> Doyle, J. F., Kaloodah, Lochinvar.—Wines. 660      | 108 <sup>a</sup> Shanahan & Jennings.—Wool. 667 |
| 99 Monk, D. J., Sydney.—Malt and wine vinegars. 660                | 108 <sup>b</sup> Henty & Balfour.—Wool. 667     |
| 100 Marshall, J., Paddington Brewery.—Ale and porter. 660          | 108 <sup>c</sup> Learmonth, L.—Wool. 667        |
| 101 Hardie, John, Sydney.—Biscuits. 661                            | 108 <sup>d</sup> White, F. R.—Wool. 667         |
| 102 Layton, Fred., Grafton, Clarence river.—Castor oil. 662        | 108 <sup>e</sup> Caughey, S. M.—Wool. 667       |
- Textile Substances of Vegetable or Animal Origin.**
- |   |  |
|---|--|
| 103 Hemmings, F. & W., Loma Loma, Fiji.—Cotton. 665                                 | 108 <sup>f</sup> Campbell, D. H.—Wool. 667   |
| 104 Ryder Bros., Mango Island, Fiji.—Cotton. 665                                    | 108 <sup>g</sup> Wilson, A.—Wool. 667  |
| 105 Hoff, Camille, Nakutakina, New Caledonia.—Cotton. 665                           | 108 <sup>h</sup> Loder, A.—Wool. 667   |
| 106 Moore, Charles, Botanic Gardens, Sydney.—Vegetable fibres of various kinds. 666 | 108 <sup>i</sup> Lethbridge, G. L.—Wool. 667   |
| 107 Rudder, E. W., Kempsey.—Fibre of gigantic nettle tree. 666                      | 109 Lowe, A. H., Dynevor.—Wool. 667  |
| 107 <sup>a</sup> Cox, E. K.—Wool. 667   | 109 <sup>a</sup> Hume, E. B.—Wool. 667   |
| 107 <sup>b</sup> Cox, G. H.—Wool. 667   | 109 <sup>b</sup> Bowman, E. & A.—Wool. 667   |
| 107 <sup>c</sup> Cox, F. & A.—Wool. 667   | 109 <sup>c</sup> Brown, T., & Co.—Wool. 667  |
| 107 <sup>d</sup> Lamb & Roberts.—Wool. 667  | 109 <sup>d</sup> Gell, P. H.—Wool. 667   |
|   | 109 <sup>e</sup> Gilbert, A. N.—Wool. 667  |
|   | 109 <sup>f</sup> Macdonald, J. L.—Wool. 667  |
|   | 109 <sup>g</sup> Allen, J.—Wool. 667   |
|   | 109 <sup>h</sup> Brodribb, W. A.—Wool. 667   |
|   | 110 May, J. M., Randwick, near Sydney.—Silk materials from the grain to the manufacture, produced by the inmates of the Asylum for Destitute Children, Randwick. 668 |
|   | 111 Thorne, George, Sydney.—Cocoons and cards of eggs desiccated and pierced, grown at Claremont, Rose Bay, Sydney. 668  |
- Agricultural Engineering and Administration.**
- |   |
|---|
| 112 Bell, H., Sydney.—Bonedust. 681     |
| 113 Berry, J. S., Botany.—Bonedust. 681 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# VICTORIA.

(North of Nave, Columns 11 to 13.)

## Chemical Manufactures, Ceramics, Furniture.

### Chemical Manufactures.

- 1 Bosisto, Joseph, Richmond, Melbourne.—Chemical and pharmaceutical preparations obtained from the eucalyptus or gum trees of Australia, and other indigenous vegetation. 200
- 3 Hood & Co., Melbourne.—Chemical and pharmaceutical preparations. 200
- 4 Lewis & Whitty, Fitzroy.—Washing and baking powders, ball blue. 200
- 5 Stringer & Co., Melbourne.—Baking powder. 200
- 6 Sullivan, Joseph, Melbourne.—Poor man's filter; disinfectants. Fluke specific and lick, hydrated silicate of aluminium. 200
- 7 Woodward, George, Kew.—Guano, deodorants, block of deodorized night-soil. 200
- 8 Pitts, Charles, & Son, Emerald Hill.—Neat's-foot and trotter oil. 201
- 8a Apollo Stearine Candle Co. (limited), Footscray.—Stearine and paraffin candles, and products. 201
- 9 Kitchen & Sons, Melbourne.—Stearine and large carriage candles. 201
- 10 Borthwick, Alex., Melbourne.—Varnishes, anti-fouling composition for ships' bottoms, enameled cast iron pedestal pillars, anti-corrosive paint. 202
- 11 Bowman, John S., Melbourne.—Colonial crayons. 202
- 12 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Crayons. 202
- 13 Lewis & Whitty, Melbourne.—Blacking. 202
- 14 Hogg, S. P., & Co., Melbourne.—Curry powder. 203
- 15 Lewis & Whitty, Fitzroy.—Hair oil, essences, curry powder. 203
- 16 Perry, Hunter, & Co., Sandhurst.—Safety fuse. 204

### Ceramics—Pottery, Porcelain, Glass, etc.

- 17 Birmingham & Lacy, Brunswick.—Red building and white pressed and moulded bricks. 206
- 18 Nolan, Luke, Brunswick.
  - a Stoneware drain pipes 206
  - b Bronze vases, stone porous jugs, patent damp-proof for floor ventilation. 210
- 19 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.
  - a Fire-clay crucibles. 207
  - b Encaustic tiles, trusses, vases, etc. 208
  - c Earthenware and pottery. 210
  - d Glassware. 216

- 20 Adams, R. T., Melbourne.—Filters. 210
- 21 Bendigo Pottery Co., Sandhurst.—Earthenware worm for still. 210
- 23 Ferguson & Urie, Melbourne.—Stained glass for windows. 214
- 24 Gledhill, Melbourne.—Glass bottles. 215
- 25 Melbourne Glass Bottle Works Co., Emerald Hill.—Glass bottles. 215
- 26 Mount & Co., Emerald Hill.—Glassware. 215

### Furniture, etc.

- 27 Alcock & Co., Melbourne.—Blackwood billiard table with appliances; console table. 217
- 28 Carr & Sons, Melbourne.—Window blinds, window sash, with Venetian shutters, etc. 217
- 29 Davis, J., Richmond.—Window sash. 217
- 30 Hodgson Bros., Sandhurst.—Self-acting Venetian blind, spring roller blind. 217
- 31 McEwan, James, Melbourne.—Sideboard. 217
- 32 Muschiatti, Lewis, Melbourne.—Pier glass, console table. 217
- 33 Baker, John, Emerald Hill.—Safety steps. 220
- 34 Wiegmann, August, Melbourne.—Basketware cradles, perambulators, chairs and flower stands, baskets. 221
- 35 Walker, A. R., Melbourne.—Gas cooking stoves. 222
- 36 Shaw, Alfred, & Co., Melbourne.—Millet brooms and whisks. 224
- 37 Guthrie, G. D., Epsom, Sandhurst.—Collection of pottery ware for household use, etc. 224
- 38 Bogle, Andrew, & Co., Melbourne.—Boot and shoe brushing and cutters' polishing and sharpening machine. 224
- 39 Draper & Sons, Melbourne.—Earth-closets and fittings. 226

### Yarns and Woven Goods of Vegetable or Mineral Materials.

- 40 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Flax, ropes, lines, twines, etc. 229
- 41 Donaghy, Michael, Geelong.—Ropes and lines. 229

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Woven Fabrics, Paper, Weapons, Vehicles, Art.

42 Miller, James, & Co., Melbourne.—  
Ropes and lines. 229

43 McPherson, Thomas, Melbourne.—  
Corn sacks, wool packs, and sugar bag-  
ging. 229

## Woven and Felted Goods of Wool, etc.

44 Barwon Woolen Mill Co., Geelong.

a Tweeds. 235

b Blankets. 237

45 Gray, Alexander, & Co., Albion Wool-  
len Mills, Geelong.—Plain and fancy  
tweeds. 235

46 Ballarat Woolen Co., Ballarat.—  
Shawls, tweeds, blankets. 237

47 Director of Botanic Gardens, Mel-  
bourne.—Dyed woolen cloth and silk. 238

48 Robertson, John, Melbourne.—Dyed  
Angora goat's fleece. 240

49 Zoological and Acclimatization So-  
ciety, Melbourne.—Angora goat's hair. 240

## Silk and Silk Fabrics.

50 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.—  
Silk cocoons from the Acclimatization  
Society, Victoria, and Mrs. Bladen Neill;  
cultivated silk, in cocoons and hanks,  
also bleached, dyed, and worked upon  
lama. 242

51 Timbrell, Ann, Collingwood.

a Cocoons produced by silkworms from  
Japan, France, Italy, and Greece. 242

b Silk (raw material in hank). 243

c Victorian silk, worked on Brussels net. 246

52 Victoria Ladies' Sericulture Co.  
(limited), Castlemaine.—Silk, desiccated  
and pierced cocoons. 248

Clothing, Jewelry, and Ornaments,  
Traveling Equipments.

53 Ford Brothers, Melbourne.

a Fith hats, in felt, silk, merino, etc. 251

b Fith sunshades for horses. 254

54 Inspector-General of Penal Depart-  
ment, Melbourne.—Boots and shoes. 251

55 Rosier, John, Melbourne.—Boots  
and shoes. 251

56 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.

a Myall pipes; rouleau boxes of myall  
wood. 254

b Address-case of inlaid leather. 255

57 De Richelieu, Madam F., Windsor.—  
Ornaments made from fish scales, etc. 254

58 Passacker, Evans, & Co., Mel-  
bourne.—Registered edge, solid leather  
portmanteaus. 255

## Paper, Blank Books, Stationery.

59 Botanic Gardens, Director of, Mel-  
bourne.—Paper made from various barks,  
stems, and leaves. 260

60 Rameaden, Samuel, Melbourne.—  
Various grades of paper, including car-  
tridge, printing, and wrapping paper. 260

## Weapons, etc.

61 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.

a Aboriginal weapons, native axe. 268

At heads of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Medicine, Surgery, Prosthesis.

62 Stanway, W., South Yarra.—Models  
of chairs for invalids. 279

Hardware, Edge Tools, Cutlery, and  
Metallic Products.

63 Danks, John, Melbourne.—Valves,  
cocks, lubricators, injectors, etc. 284

64 McIlwraith, John, Melbourne.—Gas  
pipe and tin tube. 284

Fabrics of Vegetable, Animal or  
Mineral Materials.

64a Commissioners for Victoria, for  
the Philadelphia Exhibition, Melbourne  
—Victorian and English ensigns. 288

## Carriages, Vehicles, and Accessories.

(For farm vehicles and railway carriages,  
see Departments of Agriculture and Ma-  
chinery.)

65 Stevenson & Elliott, Melbourne.—  
Landau. 292

66 Bothwell, Wade, Melbourne.—Har-  
ness, saddles, whips, etc. 296

67 Glenister, W. A., Geelong.—Axles,  
Colling's crank, etc. 296

68 Stoneman, Alfred, Richmond.—Car-  
riage springs. 296

## Sculpture.

69 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.—  
Medals of the Victorian Intercolonial Ex-  
hibition, 1875; seals of the Melbourne  
Public Library, University, and Exhibi-  
tion of 1862. 402

## Painting.

70 Campbell, O. R., Windsor.—Cross-  
ing the Plains. 410

71 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.—  
Heraldic painting on panels. 410

72 Curtis, J. W., Melbourne.—Track off  
the Point Nepean road. 410

73 Guerard, E. Von, Melbourne.—Pul-  
pit rock, Phillip Island, Ballarat, in  
1873. 412

74 Johnston, H. J., Melbourne.—Sum-  
mer Sunset. 412

75 Whitehead, Isaac, Melbourne.—  
Dandenong State Forest. 412

## Engraving and Lithographing.

76 Bowman, John S., Melbourne.  
a "The Knob in the Alps," crayon, Miss  
Bowman.

b "In the Alps," crayon, Miss Adams.

c "Fall from the Omoo Plains," crayon.

d "Valley in North Gippsland," crayon.

e "A Pool in the Otway Ranges," crayon,  
F. Shaw.

f "Bushy Park," crayon. 420

77 Commissioners for Victoria, for the  
Philadelphia Exhibition, Melbourne.—  
Lithographs of fossils, roots, and seeds. 423

## Art, Machinery, Agriculture.

## Photography.

- '8 Ararat, Shire Council of, Ararat.—Photographic views and statistics of the shire. 430
- 79 Batchelder & Co., Melbourne.—Photographs of persons born in the colony of Victoria. 430
- 80 Bock, Henry, Gippsland.—Photographs of Victorian native flowers. 430
- 81 Chuck, T. F., Melbourne.—Photographs of persons born in the colony of Victoria. 430
- 82 Colac, Shire Council of, Colac.—Photographic views of the district. 430
- 83 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. a Photographic views of scenery, public and private buildings, cattle, etc. 430  
b Biographical charts of the schools of Venice and the Venetian state schools. 430
- 84 Creswick, Borough Council of, Creswick.—Photographic views and statistics of the borough. 430
- 85 Darebin Shire, Council of, East Bourke.—Photographic views and statistics of the shire. 430
- 86 Echuca, Borough Council of, Echuca.—Photographic views and statistics. 430
- 87 Emerald Hill, Borough Council of, Emerald Hill.—Photographic views. 430
- 88 Hotham, Town Council of, Hotham.—Photographic views and statistics of the town. 430
- 89 Johnstone, O'Shannessy & Co., Melbourne.—Photographs of persons born in the colony of Victoria, photographs colored in oil. 430
- 90 McDonald, D., St. Kilda.—Photographic views. 430
- 92 Phoenix Foundry Co. (limited), Ballarat.—Photograph of locomotives, engine, and tender, manufactured for the Victorian government. 430
- 93 Prahran, Town Council of, Prahran.—Photographic views and statistics of the town. 430
- 94 Robertson Brothers, Colac.—Colored photographs of cattle, bred by exhibitors. 430
- 95 Sandhurst, City of, Sandhurst.—Photographic views and statistics of the city. 430
- 96 Stewart & Co., Melbourne.—Photographs of persons born in the colony of Victoria. 430
- 97 Surveyor General of Victoria, Melbourne.—Photographic views of botanical and other gardens. 430
- 98 Wangaratta, Shire Council of, Wangaratta.—Photographic views and statistics of the shire. 430
- 99 Willett, G., Ballarat.—Colored photographs. 430
- 100 Wilson, Sir Samuel, Ercildown.—Photographs: team of Hereford bullocks, bred by himself; prize sheep; his residence, etc. 430
- 101 Melbourne, City of.—Photographic views of city. 430

## Industrial and Architectural Designs, etc.

- 102 Dowling, William, Emerald Hill.—Centre flowers, trusses. 442
- 103 Heathcote, T. S., Carlton.—Painted panels. 442
- 104 Murphy, Edward, Sandridge-road.—Centre flowers, and ventilators, ornamental chimney cap. 442
- 105 Patterson Brothers, Carlton.—Tables of imitation wood and marble. 442
- 106 Pepper, George, Windsor.—Plasterers' models, ceiling and wall ventilators. 442

## Machines, Tools, etc., of Mining, Chemistry, etc.

- 107 Morrison, L. K., Melbourne.—Abyssinian tube-wells and pumps, with boring apparatus. 501
- 108 White, David, Stawell.—Safety hook, to prevent accidents from overwinding in mining claims. 503
- 109 O'Malley, Edmund, Melbourne.—Ventilating safety cage, for mines. 504
- 110 Harkness, A., & Co., Victoria Foundry, Sandhurst.—Disk, fitted on screwed stamper shank, and showing principle; cam or wiper. 505
- 111 Perry, Davis, & Co., Sandhurst.—Stamper gratings. 505

## Railway Plant, Rolling Stock, etc.

- 112 Cornish & Co., Melbourne.—Seats for railway carriages. 571
- 113 Stoneman, Edward, Richmond.—Railway truck spring. 573

## Aerial, Pneumatic, and Water Transportation.

- 114 Cornish & Co., Melbourne.—Life-preserving buoys, mattresses, belts, rafts, etc.; seats, couches, and mattresses for ships. 590

## Arboriculture and Forest Products.

- 115 Bass River Steam Saw-Mills, Bass river.—Blue gum timber. 600
- 116 Director of Botanic Gardens, Melbourne. a Carpological collection; barks, polished woods, fibre and tow prepared from barks, leaves, and stems. 600  
b Resins, gums, oleo fat; and caoutchouc. 603
- 117 Lands and Agriculture, Department of, Melbourne.—Native woods. 600
- 118 Commissioners for Philadelphia Exhibition, Melbourne. a Boxes, paper knives, and tube, made of Victoria woods. 601  
b Myall and grass-tree gum, rubber and rubber stamp. 603
- 119 Clark, John, & Sons, Melbourne.—Wattle bark. 608

## Agricultural Products.

- 120 Taylor, John, Allansford.—Adelaide wheat, grown at Merunga, near Warrnambool. 600

## Agricultural, Animal, and Vegetable Products.

- 120a Patience, John, Ichuca.—Purple straw wheat. 620
- 120b Wright, Thomas Spencer, Rochester.—Purple straw wheat. 620
- 120c Kelly, Mortimer, Bridgewater.—Wheat. 620
- 120d Patterson, J. Matthew, Loddon.—Wheat. 620
- 121 St. Arnaud Pastoral & Agricultural Society, St. Arnaud.—Short oats, wheat, barley. 620
- 121a O'Reilly, Thomas, Toolamba.—Wheat. 620
- 121b Adams, John, Warring.—Wheat. 620
- 121c Smith, George, Ballard.—White Tuscan wheat. 620
- 122 Scott, James, Indigo, Chiltern.—Wheat. 620
- 123 Commissioners for Philadelphia Exhibition, Melbourne.  
a Collection of varieties of wheat and grass-tree plant. 620  
b Collection of beans. 621
- 124 O'Keefe, Andrew, Adelaide Vale, Clare Inn.—Purple-straw wheat. 620
- 125 Myring, Joseph, Campbell's Creek, Castlemaine.—Barley. 620
- 126 Adams, James, Warring.—White Tuscan wheat. 620
- 127 Laidlay, John, Bundoora, Plenty-road.—Wheat. 620
- 128 McNair, Angus, Bellerine East.—New fodder-pea. 620
- 129 Stewart & Ferguson, Indigo, Chiltern.—Wheat. 620
- 130 Connor, James, Allansford.—Fox-tail oats, grown at Merunga, near Warrnambool. 620
- 131 Schmitt, Lewis, Mornington.—Wheat. 620
- 132 Buckley, Edward, Newbridge, Loddon.—Red-straw wheat from counties of Gladstone and Bendigo, oats. 620
- 133 Jack, John, Oxley Plains, Ovens District.—Frampton white wheat, grown on chocolate soil after English grass. 620
- 134 Northeastern Pastoral & Agricultural Society, Murchison.—Wheat grown by J. McNab, Tabilk. 620
- 134a Catlin, James, Runnymede.—Purple-straw, white Tuscan and other wheats. 620
- 135 Moncrieff, John, Tabilk, Goulburn river.—Purple-straw and white wheat. 620
- 136 Gilmour, Andrew, Colomsky, Buangor.—Oats from parish of Ballyrogan. 620
- 136a Ararat Flour Mill Co. (limited).—Prime miller's wheat. 620
- 137 Rossi, Thomas, Dry Diggings, near Daylesford.—Purple-straw wheat. 620
- 138 Polson, Angus, Chapman, Moyston.—English barley, Tartarian oats, purple-straw and white wheat. 620
- 139 West Bourke Pastoral & Agricultural Society, Romsey.—White Tuscan wheat, grown by Hon. T. F. Hamilton. 620
- 140 Aboriginal Mission Station, Coranderrk.—Hops. 623

- 141 McKenzie, James F., & Co., Melbourne.—Coffee, chicory, cocoa, and chocolate made from Trinklad nuts; mustard, spices. 623

## Land Animals.

- 142 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.  
a Water fowl, stuffed by Chas. French. 635  
b Manna, with the insect producing it. 638
- 143 St. John, F., Melbourne.—Ducks, plover, grouse, quail, black swan, etc. 635
- 144 Grimwood, Thomas, Fern Tree Gully.—Quail, snipe, landrail. 635
- 145 Gaskell, Joseph, Melbourne.—Australian snipe. 635
- 146 Robertson, W. W., Richmond.—Australian native birds. 635
- 147 Gaskell, Joseph, Melbourne.—Wild animals. 637
- 148 Godfrey, F. R., Melbourne.—Wild animals. 637
- 149 McCoy, Prof., Melbourne University.—Wild animals, and black swan. 637
- 150 French, C., Melbourne.—Australian longicorns, buprestidæ, lepidoptera, etc. 638
- 151 Timbrell, Ann, Collingwood.—Japan silkworms, modeled in wax. 638

## Water Animals, Fish Culture and Apparatus.

- 153 St. John, F., Melbourne.—Fish. 641

## Animal and Vegetable Products.

- 154 Bird, George, Inkerman, Lyndhurst.—Cheese. 651
- 155 Pierce, G. G., Melbourne.—Cheese. 651
- 156 Riddle, J., Lancefield.—Cheese. 651
- 157 Clark, John, & Sons, Melbourne.—Leathers, skins, basils. 652
- 158 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Rugs made from skins of Victorian animals. 652
- 159 Fink, M., Geelong.—Skins. 652
- 160 Quinn, H. S., Richmond.—Dyed and white wool mats, kangaroo glove leathers. 652
- 161 Brearley Brothers, Geelong.—Sole leather. 652
- 162 Dunkley & McBride, Melbourne.—Sash lines, whip gut, gut lathe bands, sausage casings. 652
- 163 Pearce Brothers, Fremantle, Western Australia.—Hides, leather, skins. 652
- 164 Fitts, Charles, & Sons, Emerald Hill.—Glue. 652
- 165 Penal Department, Inspector-General of, Melbourne.—Leather. 652
- 166 Wallis & Co., Richmond.—Leather, goat skin mat. 652  
Malt. 657
- 172 Bennett, T. K., Melbourne.—Preserved meats. 656
- 173 Director of Botanic Gardens, Melbourne.—Jam. 656

## Animal and Vegetable Products, Textile Substances.

- 174 Zorn, Edward, Clayton's-road, near Oakleigh.—Tomato and Oakleigh sauces. 656
- 175 Wright, Payne, & Co., South Yarra.—Fruit jams. 656
- 176 Watson & Paterson, Melbourne.—Hams, bacon, mess pork. 656
- 177 Western Meat Preserving Co., Colac.—Preserved meats. 656
- 178 Melbourne Meat Preserving Co., Melbourne.—Preserved meats. 656
- 179 Lyon, George, Beechworth.—Tomato sauce. 656
- 180 Grant, Mrs., Richmond.—Tomato sauce. 656
- 181 Comport, Henry, Cheltenham.—Tomato sauce. 656
- 182 Stringer & Co., Melbourne.—Mixed pickles, sauces, curry powder. 656
- 182a Boddy, Edward, Nagambie.—Flour. 657
- 182b Hood, F. & J., Melbourne.—Malt. 657
- 183 McKenzie, Jas. F., & Co., Melbourne.—Oatmeal, groats, brose meal. 657
- 183c Martin, P. J., Melbourne.—Malt. 657
- 184 Trouette & Blampied, Great Western, Ararat District.—Wines. 660
- 184d Myring, Joseph, Campbell's Creek, Castlemaine.—Malt. 657
- 185 Best, Joseph, Great Western, Ararat District.—Wine. 660
- 185e Perrin, William, Jr., Richmond.—Malt. 657
- 186 Docker, F. G. & J. B., Wangaratta, Beechworth District.—Wine. 660
- 187 Evans, Henry, Beechworth District.—Wine. 660
- 188 Mellon, Francis, Dunolly, Castlemaine District.—Wines. 660
- 189 Botten, William, Eddington, Castlemaine District.—Wine. 660
- 190 Jung, Otto, Castlemaine, Castlemaine District.—Wines. 660
- 191 Schroeder, Castlemaine, Castlemaine District.—Wines. 660
- 192 Crippa, Fabrizio, Hepburn, Castlemaine District.—Wine. 660
- 193 Greer & Co., Echuca, Echuca District.—Wines. 660
- 194 Vettler, John, Echuca, Echuca District.—Wines. 660
- 195 Weber, Jacob, Geelong, Geelong District.—Wine. 660
- 196 Deppeler, Jacob, Gheringhap, Geelong District.—Wine. 660
- 197 Ritchie, John, Murgheboluc, Geelong District.—Wine. 660
- 198 Bear & Ford, Tabilk Vineyard, near Seymour, Goulburn District.—Wine. 660
- 199 Egli, F., Tabilk, Goulburn District.—Wine. 660
- 200 Schmitt, Franz, Berwick, Melbourne District.—Wine. 660
- 201 Francis, Charles, Sunbury, Melbourne District.—Wines. 660
- 202 St. Hubert's Vineyard Co., Yering, Melbourne District.—Wines. 660
- 203 Johnston, J. S., Craiglie Vineyard, Sunbury, Melbourne District.—Wines. 660
- 204 Maplestone, Charles, Ivanhoe Lodge, Heidelberg, Melbourne District.—Wines. 660
- 205 Brasche, Charles, Sunbury, Melbourne District.—Wine. 660
- 206 Snowden, E. G., Boroondara, Melbourne District.—Wine. 660
- 207 Smith, G. S., Wahgunyah, Melbourne District.—Wine. 660
- 208 Pohl, Carl, Strathfieldsaye, Sandhurst District.—Wines. 660
- 209 Bruhn, Albert, Strathfieldsaye, Sandhurst District.—Wines. 660
- 210 Fuchs, Adolph, Strathfieldsaye, Sandhurst District.—Wines. 660
- 211 Flecher, August, Shamrock Vineyard, Emu Creek, Strathfieldsaye, Sandhurst District.—Wines. 660
- 212 Shaw, F. K., Goornong, Sandhurst District.—Wine. 660
- 213 Grosse, Frederick, Strathfieldsaye, Sandhurst District.—Wines. 660
- 214 Grosse, Fred., Toorong Vineyard, Bendigo, Sandhurst District.—Wine. 660
- 215 Greiffenhagen, Wm., Strathfieldsaye, Sandhurst District.—Wines. 660
- 216 Brown, H. J., Australian Distillery, Melbourne.—Geneva spirits of wine. 660
- 217 Fuller, Alfred, Kew.—Ale, stout. 660
- 218 Henelly, James, Melbourne.—Ale. 660
- 219 Latham, Edward, Carleton Brewery, Carleton.—Ale, porter. 660
- 220 Martin, P. J., Melbourne.—Ale. 660
- 221 Reed, Henry, & Co., South Yarra.—Vinegar. 660
- 222 Steward, James, Eaglehawk, Sandhurst.—Ale. 660
- 223 Treacy, John, & Co., Geelong.—Ale, stout. 660
- 224 Warrenheip Distillery Co., Ballarat.—Whisky, Geneva spirits of wine. 660
- 225 Guest, T. B., & Co., Melbourne.—Fancy biscuits. 661
- 226 Smith & Son, West Melbourne.—Biscuits. 661
- 227 Swallow & Ariell, Sandridge.—Biscuits. 661
- Textile Substances of Vegetable or Animal Origin.**
- 228 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Cotton. 665
- 229 Atkinson, Wm., Camperdown.—Teazles. 666
- 230 Longmire, Thomas, Kooroocheang, Smeaton.—Flax stalks and seeds. 666
- 231 McPherson, Thomas, & Co., Melbourne.—Jute. 666
- 232 Armstrong, Alex., Warramintine, Shelford.—Wools. 667
- 233 Arnold, George, & Co., Melbourne.—Assorted wools grown by James Gibson, Cleveland, Tasmania; Wm. Gibson & Son, Scone, Tasmania; P. Russell, Langi Willi and Carnham, Victoria; Wm. Cumming, Mt. Evans, Victoria; A. M. Campbell, Melaluka, Victoria; John



## Textile Substances, Agricultural Machinery, Fruits.

Maclean, Mooloomoon, Victoria; Thos. Russell & Co., The Plains, Victoria; G. W. Thomson, Challicum, Victoria; Thos. Millar, Green Vale, Victoria; Executors of late A. Russell, Mawallok, Victoria; Wm. Lewis, Stoneleigh, Victoria; J. & S. Austin, Mount Pleasant, Victoria; and Wm. Murray, Brie Brie, Victoria. 667

234 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Wools; wool from S. Robertson, Geelong. 667

234a Cumming, Thomas F., Stoney Point. 667

235 Currie, John Lang, Larra, Derimallum.—Wools. 667

236 Degraives, C. & J., Coliban Park, Elphinstone.—Wool. 667

237 Elder, W. & N. G., Elder, Rookwood.—Wools. 667

238 Gilbert, Alfred N., Warwilla Station, Wanganilla, Denilquin.—Wools. 667

239 Goldsbrough, R., & Co., Melbourne.—Assorted wools, grown by James Alexander, Woodhouse station; R. & J. Ramsey, Narrow Plains station; Carter Bros., Glenisla station; J. & H. Osborne, Momalong Plains; A. & H. McCulloch, and others. 667

240 Greaves, Edward G., Barriallock, Skipton.—Wool. 667

241 Hastings, Cunningham, & Co., The Australian Wool Stores, Melbourne.—Fleeces of wool from the following breeders: H. Cattanaach, Tellegara; C. W. Simson, Mundagal; Godfrey & Chambers, Pevensey; F. L. Parker, Quiamong; Everett & Watson, Tchelery and Nyang; doo. Wm. Lang, M. L. A., Wargam; doo. Phillip Russell, M. L. A., Carngam and Langi Willi; John L. Currie, Larra; Thomas Dowling & Sons, Jellalabad; executors of late A. Russell, Mawallok; Wm. Lewis, Stoneleigh; Ewan McPherson, Binduck; Godfrey McKinnon, Goonambill; Russell & Shaw, El Elwah; Rutherford Brothers, Wynna; Hon. Robert Simson, M. L. A., Langi Kal Kal; Nichol & Telford, Tarrawonga; Knight & Lydiard, Koorongah; Mount Battery Co., Mount Battery; Alfred Chinery, Delatite; Alexander Wilson, Mount Emu; J. G. Reeves, Footscray. 667

242 Henty, Edward, Portland.—Wools. 667

247 Reeves, Isaac G., Footscray, Melbourne.—Wool. 667

248 Russell, Thomas, Barunah Plains, Mount Hesse.—Wool. 667

249 Rutledge, William, Farnham Park, Warrnambool.—Fleeces. 667

250 Rutherford, Andrew, Como, Kensington, Geelong.—Wool. 667

251 Synnot, Monckton, Melbourne.—Wool. 667

252 Synnot, George, & Co., Geelong.—Wool. 667

253 Thomas, C. T., North Sandridge.—Dressed skin of pure Romney ewe, bred by R. Muldoon, Boos. 667

254 Timms Brothers, Mount Hesse, Beac.—Wools. 667

255 Watson, Alexander, Warribee.—Fleeces. 667

256 Wilson, Sir Samuel, Oakleigh Hall, East St. Kilda.—Wools and fleeces. 667

257 Wilson, John, Lismore.—Wool. 667

258 Howard, John, near Albury.—Sample cocoons of mulberry silk-worms, with wound silk in its natural colors; floss silk; Japanese and Italian grain; hanks of suffocated and pierced cocoons. 668

## Machines, Implements, and Processes of Manufacture.

259 Lennon, Hugh, North Melbourne.—Double-furrow plow. 670

260 Bodington, Robert, Carlton.—Sheep support on rollers. 674

## Ornamental Trees, Shrubs, and Flowers.

261 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Tree ferns from Dandenong State Forest and Mount Macedon; todea ferns from Mount Macedon. 707

262 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Fac-similes of specimens of fruit, the originals of which were selected during the past season, modeled and arranged by Thos. McMillan:

a Apples and pears from Josiah Trevestan, Ballarat; Chas. Draper, Hazelghen; H. U. Cole, Twyford; Robert Whatmough, Greensborough; Horticultural Society of Victoria; John Harrison, Essendon; John Smith & Sons, Riddell's Creek; T. C. Cole; King & Sons, Fyansford; Geelong and Western District Agricultural and Horticultural Society; W. L. Hunt, Malvern; Chas. Allen, jr., South Brighton; Thos. Christian, Mount Macedon; W. Lawford, Doncaster; J. Carson; J. Roberts; H. Boyce; Mr. Freike, Carisbrook; C. May, Sunbury; J. C. Cole, Richmond; J. D. Roberts, Hawthorne; Robt. Hepburn, Hawthorne; A. Stuart, Toorak; Geo. Kilroy, Caulfield; J. Weber, Geelong; Jas. Lang, Harcourt; Sir Redmond Barry; J. Banks, Flemington; Mr. James, Ballarat; Jos. Bosisto, Richmond; and Joseph Webster Wahgunyah.

b Quinces from Sir Redmond Barry and J. Weber, Geelong.

c The medlar and the loquat.

d Peaches from C. Draper, R. Whatmough, W. Lawford, J. McDonald, G. & W. D. Agricultural and Horticultural Society.

e Nectarines from R. Whatmough and market.

f Apricots, plums, cherries, and olea europaea.

g Grapes, mulberries, figs, pomegranates, and oranges.

h Kau apples from Mr. Graham and the Melbourne Botanical Gardens.

i Gooseberries from Thos. Lang & Co. and F. Moss, Buninyong.

j Black, red, and white currants from Thos. Lang & Co.

k Raspberries from Henry Boyce.

## Fruits, Flowers.

- 1 Almond, walnut, and hazel nuts.  
 \* Strawberries.  
 \* Tomatoes from Horticultural Society's  
 Gardens; W. Chandler, Scoresby; and  
 King & Son, Fyansford.  
 o Egg apple from H. J. Dines.

- p Cape gooseberries and capsicums.  
 q Book collection of plants, shrubs, trees,  
 and herbs. 709  
 263 Gaskell, Mrs., Melbourne.—Fac-  
 similes of Victorian bush flowers. 700

## SOUTH AUSTRALIA.

(North of Nave, Columns 10 to 17.)

## COLLECTIVE EXHIBIT.

## Minerals, Chemicals, Manufactures, Clothing.

Minerals, Ores, Stone, Mining  
Products.

- 1 Clark, F., & Sons, Adelaide.—Iron  
 ores. 100  
 2 Balhannah Mining Co., Adelaide.—  
 Copper ores and bismuth. 100  
 3 North Yelta Mine, near Adelaide.—  
 Copper ores. 100  
 4 Moonta, Wallaroo, and other mines,  
 near Adelaide.—Copper ores. 100  
 5 Crabb, R. S., Adelaide.—Asurite and  
 malachite from the Burra Burra mine,  
 near Adelaide. 100  
 5a South Australian Commissioners.  
 —Specimens of gold quartz from the  
 northern territory. 100  
 5b Coozong Oil & Coal Co.—"Coosong-  
 gik," a mineral caoutchouc. 100

COLLECTIVE EXHIBIT OF AURIF-  
EROUS QUARTZ FROM THE NORTHERN  
TERRITORY OF SOUTH AUSTRALIA, BY THE  
COMMISSIONERS, FOR THE FOLLOWING  
OWNERS. 100

- 6 Ayliffe, I. H., W. Union Mine.  
 7 Becker, I., Yam Creek.  
 8 Brese & Starke, Extended Union  
 Mine.  
 9 Caledonia New Amalgamated Co.  
 10 Golden Stream Claim.  
 11 Griffiths, W. K., South Union Mine.  
 12 Grove Hill Co.  
 13 Gunn, J. H., Britannia Reef.  
 14 Lewis, John, Pine Creek.  
 15 Bernardo, M., Pine Creek.  
 16 New Telegraph Co.  
 17 Sandy Creek Claim.  
 18 Shepperd, E., John Bull Reef.  
 19 Sandy Creek Puddling Co.

- 20 Tripp, J. P., Lady Alice & Union  
 Reef.  
 21 Union Prospectors Co.  
 22 Whitelaw, E. H., Pine Creek.  
 23 Westcott, J. S., & Wisendunger, I.,  
 North Union Mine.  
 24 South Australian Commissioners,  
 Adelaide.—Marble, sandstone, and slate  
 from quarries near Adelaide. 100

## Chemical Manufactures.

- 25 Barnard, George L., Adelaide.—  
 Olive oil. 201  
 26 Davenport, Samuel, Adelaide.—  
 Olive oil. 201

Yarns and Woven Goods of Vegetable  
or Mineral Materials.

- 27 Knight, J. G., Adelaide.  
 a String made from human hair. 259  
 b Native bag used by Lubras (women). 250

Clothing, Jewelry, and Ornaments,  
Traveling Equipments.

- 28 Steiner, Henry, Adelaide.  
 a Shell necklace, gold brooch and earrings;  
 shell brooch and earrings set in gold. 253  
 b Silver-mounted emu vases and ornaments;  
 silver oxidized metal-figured piano candle-  
 sticks. 254  
 29 Davenport, Samuel, Adelaide.—  
 Emu eggs made up in imitation of jew-  
 elry. 253  
 30 Nitscke, W., Adelaide.—Copper  
 vase, cross, and pipe; silver cups made  
 from a dollar and a five-franc piece; tea-  
 pot made from a shilling. 254  
 31 Knight, J. G., Adelaide.—Aboriginal  
 ornaments from the northern territory of  
 South Australia. 254

For classification of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Manufactures, Education, Art, Agriculture.

- 32 Steiner, Henry, Adelaide.—Silver-mounted emu egg inkstands. 254  
 33 Wendt, J. M., Adelaide.—Silver-mounted emu egg inkstand. 254  
 34 South Australian Commissioners, Adelaide.—Skins of indigenous birds and animals of South Australia made into muffs, collarettes, etc. 256

## Military and Naval Armaments, Ordnance, Fire Arms, and Hunting Apparatus.

- 35 Knight, J. G., Adelaide.—Aboriginal weapons from the northern territory of South Australia. 269

## Hardware, Edge Tools, Cutlery, and Metallic Products.

- 36 South Australian Commissioners, Adelaide.—Iron castings made from Adelaide ore. 283

## Educational Systems, Methods, and Libraries.

- 37 South Australian Commission, Adelaide.—Herbarium, comprising specimens of all the known plants indigenous to South Australia, prepared by Dr. Schomburgk, director of the Botanic Gardens at Adelaide. 301  
 38 Adelaide Museum, Adelaide, F. G. Waterhouse, curator.—Collection of birds, mammals, reptiles, skins of animals, and eggs of South Australia. 301

## Engineering, Architecture, Charts, Maps, and Graphic Representations.

- 39 South Australian Commissioners, Adelaide.—Statistical records and maps relating to South Australia, compiled by the Surveyor-General. 335

## Photography.

- 40 Scott, G. B., South Australia.—Photograph of northern territory of South Australia. 430  
 41 South Australian Commission, Adelaide, South Australia.—Photographs descriptive of town, pastoral, and farming life in South Australia, the Adelaide Botanic Gardens, suburban views, and mining. 430  
 42 Angas, G. H., Collingwood, near Adelaide.—Photographs of stud stock. 430

## Arboriculture and Forest Products.

- 43 Hardy, Arthur, Mt. Lofty, near Adelaide.—Cork from tree raised from an acorn imported from Spain in 1864. 600  
 44 Davenport, Samuel, Adelaide.—Woods, useful and ornamental. 600  
 45 South Australian Commissioners, Adelaide.  
 a Woods, useful and ornamental, from the northern territory of South Australia, forwarded by J. B. Scott, government resident; woods from the neighborhood of Adelaide, collected by Mr. Mais, engineer in chief, and others. 600  
 b Fungi, supplied by W. B. Hughes, northern territory of South Australia. 604  
 c Red berries (seeds of the creeping licorice) and corkscrew pine seeds, from J. E. Kelsey and W. B. Hughes, northern territory of South Australia. 605

- 46 Wilke, H., & Co., Port Adelaide.—Barks for tanning; ground and chopped mimosa (black wattle), and ground acacia. 602  
 47 Knight, J. G., Adelaide.—Bark from the northern territory of South Australia. 602

## Pomology.

- 48 South Australian Commissioners, Adelaide.—Wax models of fruit taken from originals grown in South Australia. 610

## Agricultural Products.

- 49 Carling, Thomas, Adelaide.—Wheat. 620  
 50 Riggs, John, Adelaide.—Wheat. 620  
 51 Young, C. B., Adelaide.—Wheat. 620  
 52 South Australian Commissioners, Adelaide.  
 a Wheat, barley, oats, and rye. 620  
 b Peas. 621  
 c Linseed; hemp, rape, sunflower, prairie and rib grass seed. 624  
 53 Kelsey, J. E., Mt. Gambier, Adelaide.—Hops, grown in volcanic soil. 623

## Water Animals, Fish Culture and Apparatus.

- 54 Cardwell, Robert, Port Essington, northern territory of South Australia.—Trepang, cured at the fishery, Port Essington, northern territory of South Australia. 644

## Animal and Vegetable Products.

- 55 Kemp, W., Adelaide.—Sheepskin mats. 652  
 56 Angas, J. H., Collingwood, near Adelaide.—Sheepskins; skins of the spotted emu. 652  
 57 South Australian Commissioners, Adelaide.  
 a Dressed skins of the kangaroo, wallaby, and other indigenous animals; also, skins made up in designs. 652  
 b Emu eggs. 653  
 c Raisins, plums, figs, and currants. 656  
 d Wines. 660  
 58 Davenport, Samuel, Adelaide.  
 a Skins of native animals and birds. 652  
 b Emu eggs. 653  
 59 Bagot, E. M., Adelaide.—Extract of meat. 656  
 60 Hardy, Thomas, Adelaide.  
 a Raisins and currants. 656  
 b Wine. 660  
 61 Murray, Alexander, near Adelaide.—Jams, jellies, and marmalades. 656  
 61a McEwen, George, Adelaide.—Assorted jams. 656  
 62 Dunn, John, & Co., Adelaide.—Flour. 657  
 63 Magarey, Thomas, & Co., Adelaide.—Flour. 657  
 64 Cowan, Thomas, & Co., West Adelaide.—Flour. 657  
 65 Gilbert, Joseph, Pewsey Vale, Adelaide.—Wine. 662

## Wines, Textiles.

- 86 Clark & Crompton, Adelaide.—Wines. 660
- 87 Richman, J. W., Watervale.—Wines. 660
- 88 Quick, H. C., Marden, Adelaide.—Wines. 660
- 89 Ross, R. D., Highercombe, Adelaide.—Wines. 660
- 90 Kaines, John H., Adelaide.—Wines. 660
- 91 Auld, Patrick, Magill, Adelaide.—Wines. 660
- 92 Barnard, G. L., Adelaide.—Wines. 660
- 93 Hornabrook, C. A., Adelaide.—Wines. 660
- 94 White, George, Rosefield, Adelaide.—Wines. 660
- 95 Baker, Isabella, Morialta, Adelaide.—Wines. 660
- 96 Gillard, Joseph, Adelaide.—Wines. 660
- 97 Ind, G. F., Paradise, Adelaide.—Wines. 660
- 98 Foote, Henry, Adelaide.—Wines. 660
- 99 Holbrook, J. D., Adelaide.—Wines. 660
- 80 Kelly, Dr., Tintara, Adelaide.—Wines. 660
- 81 Salter, W., & Son, Saltram, Adelaide.—Wines. 660
- 82 Davenport, Samuel, Beaumont, Adelaide.—Wines. 660
- 83 Martin, James, Gawler, Adelaide.—Wines. 660
- 83a Young, C. B., Adelaide.—Wine. 660
- 84 Thornber, Unley, Adelaide.—Wines. 660

- 85 Wright, E. W., Horne Park, Adelaide.—Wines. 660
- 86 Bickford, A. M., & Sons, Adelaide.—Bitters, quinine wine, and lime-juice cordial. 660
- 87 Davis, F. C., Adelaide.—Bitters and cordials. 660
- 88 Nitschke, W., Adelaide.—Cordials and liquors. 660

## Textile Substances of Vegetable or Animal Origin.

- 89 Angas, J. H., Collingrove, Adelaide.—Wool. 667
- 90 Keynes, Joseph, Keynton, Adelaide.—Wool. 667
- 91 Murray, John, Murrayvale, Adelaide.—Wool. 667
- 92 Graham, Thomas, Adelaide.—Wool. 667
- 93 Browne, W. J., Moorak, Adelaide.—Wool. 667
- 94 Hayward, Armstrong & Co., Wonnaka, Adelaide.—Wool. 667
- 94a Crozier, W., Adelaide.—Wool. 667
- 95 McFarlane, Allan, Wellington Lodge, Adelaide.—Wool. 667
- 95a Price & Browne, Adelaide.—Wool. 667
- 96 Wurm, Frederick, Adelaide.—Silk and silk cocoons. 668

## Agricultural Engineering and Administration.

- 97 Dalwood, W. F., Adelaide.—Gunno from Browse Island, off west coast of Australia. 681

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# CAPE OF GOOD HOPE.

(South of North Aisle, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

### Minerals, Manufactures, Education and Science.

#### Minerals, Ores, Stone, Mining Products.

- 1 Cape Copper Mining Co. (limited), Cape Town.—Copper ores from Ookiep, Spectakel, Narrap, Karolusburg, and Kilderman mines, Little Namaqualand. 100
- 2 Bright, H. C. R., Mowbray, near Cape Town.—Copper ores and collection of minerals. 100
- 2a Muskett, E. B.—Galena from Banghock mine, Hope Town division. 100
- 3 Dickson, W. W., Cape Town.—Black oxide of manganese, from Hercules mine. 100
- 4 Stonestreet, Samuel, Kemberly Diamond Fields.—Diamonds and associated rocks. 100
- 5 Vice, G., Stormbergen. 100
- 5a Saltpetre from the Stormbergen. 100
- 5b Coal from the Stormbergen. 102
- 6 Wilson, A., Gas Works, Cape Town.—South African coals, cokes, and ashes. 101

#### Metallurgical Products.

- 7 Cape Copper Mining Co. (limited), Cape Town.—Copper. 111

#### Chemical Manufactures.

- 8 Smithers, J. & G., Cape Town.—Soaps. 201

#### Furniture and Objects of General Use in Construction and in Dwellings.

- 9 Moulton, R., Swellendam.—Work-box constructed of South African woods. 217
- 10 Lesar, W., Cape Town.—Table constructed of various colonial timbers. 217

#### Yarns and Woven Goods of Vegetable or Mineral Materials.

- 0a Caswood, Hon. S., Grahamstown.—Cotton table cloth. 230

#### Nothing, Jewelry, and Ornaments, Traveling Equipments.

- 11 Perry, Mrs., Cape Town.—Melon seed necklaces, bracelets, etc. 253
- 2 Gladwin, J. P., Kafirland.—Hair of Pandomise, surmounted by ring of Euphorbia jap; ivory earrings of Pandomise baboon skin; dress of witch doctor. 253

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

#### 13 Local Committee, Cape of Good Hope.

- a Native articles of dress—necklaces, armlets, earrings, etc. 253
- b Native aprons, head-dress, etc. 254

#### 14 Ayliff, Mrs., Grahamstown.—Skeletonized flowers. 254

#### Weapons, etc.

#### 15 Local Committee of Cape of Good Hope.—Knobe klerie of rhinoceros horn. 268

#### 16 Vigora, P., Cape Town.—Native weapons, Kafir assegais, Bushman axe. 268

#### Medicine, Surgery, Prothesis.

#### 17 Auret, W. H., Paarl.—Vegetable drugs and medicines. 272

#### 18 Barkly, Sir H., Governor of Cape Colony.—Bitter barks used by Kafir doctors in fever cases. 272

#### Fabrics of Vegetable, Animal, or Mineral Materials.

#### 19 Local Committee of Cape of Good Hope.—Kafir beer and milk pots, Kafir and Basuto baskets. 289

#### Educational Systems, Methods, and Libraries

#### 20 Solomon, C., Cape Town.—Map of South Africa. 300

#### 23 Solomon, Saul, & Co., Cape Town.—Specimens of bookbinding. 306

#### 24 Local Committee of Cape of Good Hope.—Catalogue of South African Public and Sir G. Grey's libraries; University calendar; reports of South African Museum, Public Library, and Botanic Gardens; Dr. Bleek's Bushman Researches. 306

#### 25 Juta, J. C., & Co., Cape Town.—Books. 306

#### 26 Mabile, A., Morija, Basutoland.—Books printed, bound, and published at Morija Mission Station, Basutoland. 306

#### 27 Stewart, G., Lovedale, Kafirland.—Books printed, bound, and published at the Lovedale Kafir Mission Institution. 306

#### Engineering, Architecture, Maps, etc.

#### 28 Local Committee of Cape of Good Hope.—Models of harbor works and dry docks at Cape Town. 330

## Art, Agricultural, Animal, and Vegetable Products.

- 29 Dunn, E. I., Cape Town.—Geological sketch map of Cape Colony. 335
- 29a Coates, H. C., Commissioner, Philadelphia, Pa.—Photograph of city of Cape Town. 335
- 29b Ayliff, Reuben, Grahamstown.—Photographs of Cape Town, harbor works, etc. 335

## Paintings.

- 30 Hermann, W., Cape Town.—Oil paintings. 410
- a View in Knysna Forest, Cape Colony.
- b View of Three Anchor Bay, near Cape Town.
- 31 Coppen, F., Cape Town.—Water color sketches. 411
- a Sketch of Hangklip, a spur of the Stormbergen, Queenstown division.
- b Sketch of the Mac Mac Falls, Lydenburg gold fields, South African Republic.
- 32 Hays, Miss Anna, Cape Town.—Water color sketch of the native population of Cape Town. 411
- 33 Hermann, W., Cape Town.—Six water color sketches of colonial scenery. 411
- 34 Thwaits, Miss F. C., Cape Town.—Six water color drawings of indigenous Cape flowers. 411

## Engraving and Lithography.

- 35a Bruton, C. I., Cape Town.—Photographs. 430
- a Views in Cape Town.
- b View of Kloof Lodge, near Cape Town.
- c Views of scenery around Cape Town.
- 35b Barnard, S. B., Cape Town.—Photographs of Cape Town, natives, etc., in a book. 430
- 35c Fenneysey, C. D., George.—Photographs of colonial scenery. 430

## Arboriculture and Forest Products.

- 36 Carson, E. J., Ookiep, Namaqualand.—Ebony. 601
- 37 Holland, B. H., Alexandria, Cape Colony.—Specimens of timber from the Alexandria crown forests, with articles made from various woods. 601
- 38 Mossop & Garland, Cape Town.—Barks in the rough and ground. 602
- 39 Smithers, J. & G., Cape Town.—Vegetable wax. 603
- 40 Dale, Dr., Cape Town.—Vegetable wax. 603

## Agricultural Products.

- 41 Barry, Arnold, & Co., Cape Town.—Wheat. 620
- 42 Myburgh, N., Meerlust, Eerste river.—Wheat. 620
- 43 Barry & Herdon, Mossel Bay.—Aloes. 623
- 44 Barry & Nephews, Cape Town.—Aloes. 623
- 45 Jongh, S. J. de, Cape Town.—Snuff. 623
- 46 Powrie, E., Mossel Bay.—Leaf tobacco and snuff. 623

## Land Animals.

- 46a Coates H. C., Commissioner, Philadelphia, Pa.—King penguin. 635
- 47 Gibbon, J. M., Cape Town.—Cochineal, grown and dried in the Botanic Gardens, Cape Town. 638

## Water Animals, Fish Culture and Apparatus.

- 48 Merriman, John, Cape Town.—Preserved crayfish from Table Bay. 643
- 49 Moodie, D., Swellendam.—Pearl oyster shells from the south coast of the colony. 645

## Animal and Vegetable Products.

- 50 Dier & Diets, Port Elizabeth.—Skins. 652
- 50a Benningfield & Son, Natal.—Elephant tusks. 652
- 51 Mossop & Garland, Cape Town.—Leather. 652
- 52 Local Committee, Cape of Good Hope.—Robe of skins of the blackbacked jackal and avarad wolf. 652
- 53 Dickson, W. W., Cape Town.—Skins of the lion and cheetah or hunting leopard. 652
- 53a Coates, H. C., Commissioner, Philadelphia, Pa.
- a Pair of horns and head. 652
- b Ostrich eggs. 653
- 54 Vigors, P., Cape Town.—Lion and leopard skins, head of a leopard, antelope and rhinoceros horns. 652
- 54a Clipp, G. W.—Pair of horns. 652
- 55 Local Committee of Cape of Good Hope.—Ostrich feathers and eggs. 653
- 56 Douglass, A., Grahamstown.—Ostrich incubator, with stuffed ostriches and eggs. 653
- 57 Powrie, E., Mossel Bay.—Beeswax. 654
- 58 Barry & Nephews, Cape Town.—Beeswax. 654
- 59 Toit, A. L. du, Rondebosch.—Grapes in brandy. 656
- 59a Volsteedt, P. J., Cape Town.—Preserved lemons, citrons, nartjes, bitter oranges, melons, and Cape gooseberries. 656
- 60 Merwe, J. H. van der, Robertson.—Grapes in brandy. 656
- 60a Merriman, John, Cape Town.—Preserved tomatoes and Cape gooseberries. 656
- 61 Falck, J. A. H., Montagu.—Peaches in brandy. 656
- 62 Clear, E., Cape Town.—Wheat flour. 657
- 63 Letterstedt & Co., Cape Town.—Wheat flour. 657
- 64 Barry, Arnold & Co., Cape Town.—Wheat flour. 657
- 65 Heydenrych, B. G. P., Cape Town.—Starch from wheat flour. 658
- 74 Ryn, J. H. van, Cape Town.—Pon-tac, red, and white wines, brandy. 660

## Wines, Textiles, Flower Work.

- |   |  |
|---|--|
| <p>75 Renen, S. van, &amp; Co., High Constantia.—Red and white wines. 660</p> <p>76 Cloete Brothers, Constantia.—Red and white wines. 660</p> <p>76 Anderson &amp; Murison, Cape Town.—Pontac, pale, and golden sherry wines. 660</p> <p>76 Cloete, H., Bellevue, Constantia.—Red and white wines. 660</p> <p>77 Green, E. K., Cape Town.—Red, white, and sherry wines. 660</p> <p>78 Collison, H. C., Cape Town.—Sherry, Madeira, Pontac, and Constantia wines. 660</p> <p>78 Cloete, J. P., Groot Constantia.—Red and white wines. 660</p> <p>79 Joubert, W. A., Stellenbosch.—Dry white wine. 660</p> <p>80 Paarl Wine and Brandy Co., Paarl.—Red and white wines. 660</p> <p>81 Rosenberg, S., Cape Town.—Brandy. 660</p> <p>82 Barry &amp; Nephews, Cape Town.—Brandy. 660</p> <p>83 Collison, H. C., Cape Town.—Cognac. 660</p> <p>84 Hauf, Dr., Robertson.—Brandy. 660</p> <p>85 Marais, H. H., Robertson.—Cape sherry wine and Congo brandy. 660</p> <p>86 Villiers, A. J. J. de, Cape Town.—Sherry, port, and red wines. 660</p> | <p>87 Villiers, A. B. de, Paarl.—Red and white wines. 660</p> <p><b>Textile Substances of Vegetable or Animal Origin.</b></p> <p>88 Cawood, Hon. S., Grahamstown.—Cotton. 665</p> <p>89 Grewar, John W., Ultenhage.—Wool. 667</p> <p>90 Priest, W., Graff Reinet.—Wool. 667</p> <p>91 Rubidge, C., Graff Reinet.—Wool. 667</p> <p>92 Stewart, A. C., Port Elizabeth.—Wool. 667</p> <p>93 Court, P. W., Port Elizabeth.—Wool. 667</p> <p>94 Barry &amp; Nephews, Cape Town.—Wool. 667</p> <p>95 Barry, Arnold, &amp; Co., Cape Town.—Wool. 667</p> <p>96 Dier &amp; Diets, Port Elizabeth.—Wool. 667</p> <p>97 Stewart, A. C., &amp; Co., Port Elizabeth.—Angora hair. 669</p> <p><b>Ornamental Trees, Shrubs, and Flowers.</b></p> <p>98 Villiers, Miss de, Franche Hoek.—Articles made of everlasting flowers. 709</p> <p>99 Smuts, Miss G., Cape Town.—Articles made of everlasting flowers. 909</p> |
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## JAMAICA.

(North of Nave, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

## Chemicals, Woven Goods, Clothing.

## Chemical Manufactures.

- |   |     |
|---|-----|
| 1 Reynolds, John N.—Salt.   | 200 |
| 2 Frith & Murphy.—Salt.   | 200 |
| 3 Grant, Charles.   |     |
| 4 Bisulphate of lime.   | 200 |
| 5 Chewstick powder and odontine.  | 203 |
| 6 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Essential oils. | 203 |
| 7 Auvray, P. E.—Odontine.   | 203 |

## Furs and Woven Goods of Vegetable or Mineral Materials.

- |  |     |
|--|-----|
| 8 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Palm and plantain leaf mats. | 209 |
|--|-----|

## Clothing, Jewelry, and Ornaments, Traveling Equipments.

- |   |     |
|---|-----|
| 7 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.   |     |
| a Palm leaf hats.   | 251 |
| b Baskets and fans from leaves; shell baskets; walking sticks; bamboo whip; tortoise shell combs, necklaces; napkin rings and egg cups; doilies and fans made of lace bark. | 254 |
| 7a Nash, Mrs.   |     |
| a Hats made of dagger plant, lace bark, and strainer fibre.   | 251 |
| b Dagger plant and lace bark ornaments, comprising fans, flowers, baskets, etc.; earrings and brooch made of lobster shell.   | 254 |
| 8 Brooks, Mrs. G.—Doilies and fans made from lace bark, etc.  | 254 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Manufactures, Agricultural, Animal, Vegetable Products.

- 8a Reid, William.—Cocoanut Shell Ornaments; walking sticks, etc. 254

## Paper, Blank Books, and Stationery.

- 9 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government. 258  
 a Rulers. 258  
 b Paper stock. 260

## Medicine, Surgery, Prothesis.

- 10 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Cinchona barks, jalap, sena, aloes, etc. 272

## Hardware, Edge Tools, Cutlery, and Metallic Products

- 11 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Razor strops made from stems of plants. 281

## Fabrics of Vegetable or Mineral Materials.

- 12 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.  
 a Brushes from the penitentiary. 286  
 b Ropes from sisal hemp; coir; wild cotton, cocoanut, etc. 287  
 c Bamboo baskets. 289

## Carriages, Vehicles, and Accessories.

- 13 Brass, John, & Son.—Carriage harness and riding saddle. 296

## Arboriculture and Forest Products.

- 14 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.  
 a Cedar and juniper shingles; lancewood, etc., for carriage building; cashaw, etc., for railway sleepers; pimento leaves, juniper wood, etc., for making perfumery. 600  
 b Mahogany, cedar, bullet tree, brazilletto, lignum vitæ, ebony, satinwood, rosewood, etc. 601  
 c Logwood, fustic, annatto, turmeric, etc.; divi-divi, mangrove, catechu, guanga, etc. 602  
 d Dried ferns. 604  
 15 Pantrepant Estate.—Lace bark. 600  
 15a Fisher.—Concrete for tanning. 608

## Agricultural Products.

- 16 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.  
 a Peas and beans. 621  
 b Ginger, pimento berries, nutmegs, vanilla, cayenne pepper, etc.; tobacco, tea, cocoa, and chocolate; coffees from the following parties, John McLean, Francis Chalmers, John Davidson, Mrs. MacIavery, Mrs. Lascelles, Dr. Stephens, James Harrison, Ernest Elliott, and Geo. Henderson. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

- 16a Thompson & Weitzmann.—Tobacco. 623  
 16b Espent, W. B.—Cigars. 623  
 17 Soutar & Co.—Tobacco and cigars. 623  
 17a Major, Dr.—Nutmegs. 623  
 18 Richards, W. S.—Coffee. 623

## Animal and Vegetable Products.

- 18a Fisher.—Leather. 652  
 19 Grant, Charles.—Beeswax. 654  
 20 Brass, John, & Son.—Honey and beeswax. 654  
 20a Fegan.—Bleached wax. 654  
 21 Auvray, P. E.—Bleached wax. 654  
 22 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.  
 a Candied fruits and preserves; pickles, etc.; fruits preserved in alcohol; meal made from plantains, bananas, cassava, bread, and other fruits. 656  
 b Corn, rice, and flour. 657  
 c Starch, arrowroot, etc. 658  
 d Sugars from the following parties: W. S. Richards, Albion estate and Constant Spring estate; Louis Verley, Mona estate; Ernest Elliott, Bog estate; James Harvey, Hillside estate; Joseph Reid, Caymanas estate, and J. McPhail. 659  
 e Rums from the following parties: David Galloway, Vale Royal estate; William Vickers, Frome, and other estates; M. C. Morgan, Appleton estate; James Harrison, Hordley and other estates; Plato Elphick, Belvidere estate; W. S. Richards, Hopewell estate; Ernest Elliott, Bog and other estates; Louis Verley, Mona estate; C. W. Steer, Blenheim estate; F. Hall, Mexico estate; James Harvey, Hillside estate; Joseph Reid, Camanas estate; J. Wray & Nephew, George J. Peynado, Alberga & Mitchell. 660  
 f Cocoanut, castor, groundnut, and other oils. 662  
 22a Espent, W. B.—Rum. 660  
 23 Gadpaille, Charles.—Rum. 660  
 23a Wray, J., & Nephew.—Orange and ginger wine, pimento dram, lime-juice, etc. 660  
 24 Melville James.—Rum and Falerniac wine. 660  
 25 Desnoes, P., & Son.—Rum, ginger cordial, orange wine, pimento dram, etc. 660  
 25a Alberga & Mitchell.—Orange and ginger wine, pimento dram, chutney, etc. 660  
 26 Nunes, Robert.—Rum. 660  
 27 King, Alexander, & Co.—Rum and lime-juice. 660

## Textile Substances of Vegetable or Animal Origin.

- 28 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.  
 a Wild cotton. 665  
 b Sisal hemp, China grass, pineapple, coir, bamboo, mahoe trumpet tree, bastard cedar, and other fibres, etc. 666



## BAHAMAS.

(South of North Avenue, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

## Manufactures, Agricultural, Animal, Vegetable Products.

## Chemical Manufactures.

- 1 Sargent, D., Inagua.—Specimens of salt and table salt. 200  
 2 Meadows, John G., Inagua.—Salt and table salt. 200

## Furniture and Objects of General Use in Construction and in Dwellings.

- 3 Robertson, Mrs. S. E.—Epergne. 218  
 4 Dorsette, Thomas.—Dripstone for filtering water. 224

## Clothing, Jewelry, and Ornaments, Traveling Equipments.

- 5 Minns, Albert C. J.—Necklaces, locket, pin and earrings, bracelets, solitaires and studs, vest button, spoon, and paper knife. 253  
 6 Dupuch, Joseph.—Card tray, bread platters, and walking canes. 254  
 7 Grant, Misses Julia and Mary.—Mimosa bean ornaments, card tray, watch cases, mats, and cross. 254  
 8 Armbrister, James A.—Walking canes. 254  
 9 Centennial Exhibition Committee, Nassau.—Mimosa bean card basket, bags, and bracelets, manufactured by Messrs. Jorrett, Nassau; tortoise back, cleaned and polished by J. R. Saunders, Nassau; palmetto fans and hats, manufactured by Mrs. John Taylor, Inagua. 254  
 10 Evans, Ellen, G. E.—Shell cross, basket, and bridal wreath. 254  
 11 Atwell, Misses.—Memorial wreath, cornucopia, brooches, and earrings, made of shells and fish scales. 254  
 12 Symonett, Mrs. Matthew.—Palm tree, and watch stand. 254  
 13 Wallace, Alexander C.—Walking canes. 254  
 14 Eldon, Mrs. James.—Case containing orange tree. 254  
 15 Garner, Mrs. Maria E.—Basket, fruit basket, bridal wreath, and sprays. 254

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 1 Carrol, Richard E., Long Island.—Rope made of aloë fibre. 287  
 Centennial Exhibition Committee, Nassau.—Palmetto rope. 287  
 Knowles, Joseph A., Long Island.—Rope and net made out of wild fig tree bark. 287  
 Palmetto baskets and mat. 289

## Oriculture and Forest Products.

- Knowles, Joseph A., Long Island.—Wild fig tree bark. 600

\* classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## 20 Sawyer, R. H. &amp; Co.

- a Stopper wood; ship's knees of sabicu wood; bark. 600  
 b Mahogany, sabicu, satin, bull, cedar, and cocoanut woods. 601  
 c Green ebony, brazilletto wood, and logwood. 602  
 d Myrtleberry wax. 603

## 21 George, John S.

- a Specimens of bark and palmetto leaves, yellow pine and cedar woods. 600  
 b Mahogany, sabicu, satin, stopper, orange, and lignum vitae woods. 601  
 c Logwood, brazilletto, and green ebony. 602  
 d Wax made from myrtleberry. 603

## 22 Saunders, Samuel P.—Vegetable sponge. 604

## Agricultural Products.

- 23 Boyd, Adam.—Tobacco and coffee, cultivated in New Providence. 623

## Water Animals, Fish Culture and Apparatus.

- 24 Sawyer, R. H. & Co.—Conch shells. 645  
 25 Treco, P. A.—Bahama shells, collected and arranged by J. R. Saunders. 645  
 26 Saunders, Samuel P.—Small shells. 645  
 27 George, John S.—Queen conch shells. 645

## Animal and Vegetable Products.

- 28 Sawyer, R. H. & Co.—Sponges. 650  
 29 George, John S.  
 a Beeswax. 654  
 b Arrowroot and cassava starch. 658  
 30 Centennial Exhibition Committee, Nassau.—Assorted preserved fruits, assorted pickles; pimento manufactured of native fruits by Daphne Fife. 656

## Textile Substances of Vegetable or Animal Origin.

- 31 Sawyer, R. H., & Co.—Specimens of cotton produced principally at Long Island. 665  
 32 Saunders, S. P.—Cotton. 665  
 33 Brice, D. A.—Cotton. 665  
 34 Centennial Exhibition Committee, Nassau.—Fibres of the pita and pineapple plants, plantain, banana, and aloë trees, and esparto grass; wool made from leaves of the forest pine, pita plant, banana tree, and plantain. 666

## Agricultural Engineering and Administration.

- 35 Saunders, Samuel P.—Cave earth (fertilizer). 681

## BERMUDAS.

(North of Main Aisle, H 16.)

## COLLECTIVE EXHIBIT.

## Manufactures, Education and Science, Art, Agriculture.

Furniture and Objects of General Use  
in Construction and in Dwellings.

- 1 Bermuda, Government of.—Inlaid tables. 217

Clothing, Jewelry, and Ornaments,  
Traveling Equipments.

- 2 Trimmingham, J.  
a Bermuda straw plait, bonnets, etc., palmetto plait, and articles made from the palmetto leaf. 251  
b Wreath of shell work. 254  
3 Middleton, T. D.—Articles in point lace, from Somerset Island. 252  
4 Smith, Mrs. R. T.—Fine point lace. 252  
5 Ness, Miss.—Point lace sleeveless basque. 252  
6 Ness, Miss C.—Point lace sofa pillow. 252  
7 Lines, Mrs.—Point lace. 252  
9 Bermuda, Government of.—Walking canes. 254

## Medicine, Surgery, Prothesis.

- 10 Hugh, J. B.—Medicinal herbs and drugs. 272

Educational Systems, Methods, and  
Libraries.

- 11 Education, Board of.—School-map of the Bermudas. 300  
12 Thorpe, Mrs. W.—"Afternoon in Bermuda." 306  
13 Wilkinson, Major H. J.—"The Sand Hills." 306  
14 Anon.—Bermuda flowers from nature. 306

## Engineering, Architecture, Maps, etc.

- 15 Bermuda, Government of.—Large general map of the Bermudas, details by Royal Engineers and Major Crawford, R.A.; diagram showing the monthly mean temperature of Bermuda compared with other places of winter resort, drawn by Lieut. Colonel Bland, R.E.; fac-simile of the earliest published map of Bermuda, from Norwood's survey of 1616. 335

Physical, Social, and Moral Condition  
of Man.

- 18 Bermuda, Government of.—Examples of the ancient records of the colony of Bermuda, from 1616; title deeds, or original grants of land of the Bermuda Company, 1628-9.

## Photography.

- 19 Somerset, Col. Fitzroy, R. E.—Photographs of Bermuda scenery, by the Royal Engineers. 430  
20 Hugh, J. B.—Photographs of Bermuda scenery. 430

## Aerial, Pneumatic, and Water Transportation.

- 21 Hinson, Dr.—Model of a Bermuda yacht, cutter-rigged. 594  
22 Admiralty, Lords of the.—Model of her Majesty's floating dock at Bermuda; sectional drawing of same. 596

## Arboriculture and Forest Products.

- 24 Several Contributors.—Sections and specimens of woods. 600  
25 Astwood, Mrs.—Bird's-eye cedar, and other ornamental woods. 601

## Pomology.

- 26 Committee, The.—Bananas and other fruits. 611

Marine Animals, Fish Culture and  
Apparatus.

- 27 Bermuda, Government of.—Conch shells used by cameo cutters; an extinct land shell of relatively large size; Sp. of hyaline; corals, nullipores, corallines, sea fans, and sea rods. 645

## Animal and Vegetable Products.

- 28 Bermuda, Government of.—Sponges. 650  
29 Hugh, J. B.—Dried and preserved fruits. 656  
30 Tucher, Tho. Fowle.—Arrowroot. 658  
31 Bertram, J. T.—Arrowroot and Tous les Mois. 658

Textile Substances of Vegetable or  
Animal Origin.

- 32 Peniston, W.—Fibre prepared from the leaves of fourcroye gigantea. 666

Machines, Implements, and Processes  
of Manufacture.

- 33 Bermuda, Government of.—Tools used in freeing the ground of the roots of sage and wild mimosa. 672

Ornamental Trees, Shrubs, and  
Flowers.

- 34 Bermuda, Government of.—Flowers ferns, and ornamental plants. 705

## BRITISH GUIANA.

(North of Main Aisle, F 16.)

## COLLECTIVE EXHIBIT.

## Manufactures, Agricultural and Vegetable Products.

Clothing, Jewelry, and Ornaments;  
Traveling Equipments.

- 1 Great Diamond Plantation.—Rice  
straw ornaments. 254

## Medicine, Surgery, Prothesis.

- 2 Fresson, William.—Drugs and other  
medicinal productions of the colony. 272

## Arboriculture and Forest Products.

- 3 Mackey, T. H.—Greenheart wood,  
nearly 100 years old. 600

## Agricultural Products.

- 4 Great Diamond Plantation.—Rice.  
620

## Animal and Vegetable Products.

- 5 Fresson, William.—Starches. 658  
6 Bel Air Plantation.—Vacuum pan  
sugar. 659  
7 Columbia Plantation.—Common pro-  
cess sugar. 659  
8 Greenfield Plantation.—Vacuum pan  
sugar. 659  
9 La Bonne Intention Plantation.—  
Vacuum pan sugar. 659

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 10 Met-en-Meersorg Plantation.—  
Vacuum pan sugar. 659

- 11 Ogle Plantation.—Vacuum pan  
sugar. 659

- 12 Leonora Plantation.  
a Vacuum pan and other sugars. 559  
b Rum. 660

- 13 Uitvlugt Plantation.—Vacuum pan  
sugar. 659

- 14 Vreed-en-Hoop Plantation.—Com-  
mon process sugar. 659

- 15 Versailles Plantation.—Vacuum pan  
sugar. 659

- 16 Great Diamond Plantation.  
a Vacuum pan sugar. 659  
b Rum. 660

- 17 Hope Plantation.  
a Vacuum pan sugar. 659  
b Rum. 660

- 18 Tuschen de Vrienden Plantation.  
a Vacuum pan sugar; molasses. 659  
b Rum. 660

- 19 Lusignan Plantation.—Rum. 660

Textile Substances of Vegetable or  
Animal Origin.

- 20 Godfrey, B. J.—Plantain, silk grass  
mahoe, sweet brier, and monkey apple  
fibres. 666

## CEYLON.

(North of North Avenue, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

## Minerals, Manufactures, Education, Art, Agriculture.

## Minerals, Ores, Stone, Mining Products.

- 1 Armitage Bros., Colombo.—Tin and plumbago. 100

## Clothing, Jewelry and Ornaments, Travelling Equipments.

- 2 Armitage Bros., Colombo.  
a Straw hats. 251  
b Canes. 254

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 3 Armitage Bros., Colombo.  
a India-rubber. 285  
b Ropes. 287

## Educational Systems, Methods, and Libraries.

- 4 Armitage Bros., Colombo.—Almanacs and other books. 306

## Sculpture.

- 5 Armitage Bros., Colombo.—Elephant, carved in plumbago. 405

## Photography.

- 6 Armitage Bros., Colombo.—Photographs. 430

## Arboriculture and Forest Products.

- 7 Armitage Bros., Colombo.  
a Woods. 600  
b Dye woods. 602  
c Gutta-percha and gums. 603

## Agricultural Products.

- 8 Armitage Bros., Colombo.  
a Coffee, spices, tobacco, and cigars. 623  
b Seeds. 624

## Water Animals, Fish Culture and Apparatus.

- 9 Armitage Bros., Colombo.—Mother-of-pearl and other shells. 645

## Animal and Vegetable Products.

- 10 Armitage Bros., Colombo.  
a Coco de mer. 630  
b Vegetable tallow. 632  
c Tapioca. 638  
d Sugars. 639

## Textile Substances of Vegetable or Animal Origin.

- 11 Armitage Bros., Colombo.  
a Cotton. 665  
b Fibres. 666

## STRAITS SETTLEMENT.

(North of North Avenue, Columns 15 to 17.)

## Manufactures, Art, Agriculture.

## Silk and Silk Fabrics.

- 1 Meyer, Behn, & Co., Singapore.  
a Silk floss from Rungpore. 243  
b Dyed silk from Rungpore. 243  
c Silk thread from Bengal, Gyah, and Rungpore. 244  
d Silk lace from Jubbulpore. 247

## Photography.

- 2 Meyer, Behn, & Co., Singapore.—Photographic views. 430

## Arboriculture and Forest Products.

- 3 Meyer, Behn, & Co., Singapore.  
a Woods from Singapore, Madras, Bombay, and Nagpore. 600  
b Dye-woods, galls, bark, etc. 602

## Pomology.

- 4 Meyer, Behn, & Co., Singapore.—Nuts. 621

## Agricultural Products.

- 5 Meyer, Behn, & Co., Singapore.  
a Grass. 620  
b Tea, coffee, spices, etc. 623  
c Seeds. 624

## Textile Substances of Vegetable or Animal Origin.

- 6 Meyer, Behn, & Co., Singapore.  
a Cotton boll, seed, and flake. 665  
b Hemp and fibres. 666  
c Wool. 667  
d Cocoon silk. 668

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.

## GOLD COAST.

(North of Main Aisle, B 16.)

## Minerals, Manufactures, Machinery, Agriculture.

## Minerals, Ores, Stone, Mining Products.

- 1 Colonial Government.  
 a Granite. 102  
 b White clay,—used in medicine, and to “chalk” divorced wives. 104

## Chemical Manufactures.

- 2 Colonial Government.—Palm and other oils. 201  
 3 Melton, W.—Palm, cocoanut, groundnut, and other oils. 201

## Ceramics—Pottery, Porcelain, Glass, etc.

- 4 Colonial Government.  
 a Goldsmith's furnace and crucibles. 207  
 b Earthenware. 210

## Furniture and Objects of General Use in Construction and in Dwellings.

- 5 Colonial Government.—Native stools; desk, and envelope case. 217

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 6 Crowther, Bishop.  
 a Niger mats. 229  
 b Cotton goods. 230  
 7 Colonial Government.  
 a Mats and baskets of grass. 229  
 b Cotton fabrics; Whydah and Agney cloth. 230

## Woolen and Felted Goods of Wool, etc.

- 8 Colonial Government.—Woolen fabrics. 238

## Silk and Silk Fabrics.

- 9 Colonial Government.—Silk fabrics. 245

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 10 Colonial School, Cape Coast.—Wool knitting. 250  
 11 Crowther, Bishop.—Slippers. 251  
 12 Colonial Government.  
 a Sandals, hats, etc. 251  
 b Jewelry. 253  
 c Fans, pipes, walking-sticks, etc. 254  
 d Leather satchel and leather work. 255

## Paper, Blank Books, Stationery.

- 13 Colonial Government.—Book for keeping gold accounts. 261

## Weapons, etc.

- 14 Crowther, Bishop.—Dagger. 268  
 15 Colonial Government.—Swords, daggers, bows and arrows. 268

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 16 Colonial Government.  
 a Ropes. 287  
 b Basket ware. 289

## Scientific and Philosophical Instruments and Methods.

- 17 Colonial Government.—Drums, guitars, flute, horn, etc.; strings for musical instruments. 227

## Sculpture.

- 18 Colonial Government.—Carved wooden figures, ladies, etc.; carved image exhibited at native funerals. 405

## Machines and Implements of Spinning, Weaving, Paper Making, etc.

- 19 Colonial Government.—Looms for manufacturing cotton yarns. 321

## Arboriculture and Forest Products.

- 20 Colonial Government.  
 a Odoo wood. 600  
 b Ornamental woods. 601  
 c Gums, resin, etc. 603

## Pomology.

- 21 Colonial Government.—Nuts. 611

## Agricultural Products.

- 22 Colonial Government.  
 a Beans. 621  
 b Pepper. 623  
 c Seeds, gourds, etc. 624  
 23 Davison, Mrs.—Coffee (produced in eight months, from the seed). 623

## Animal and Vegetable Products.

- 24 Colonial Government.  
 a Skins. 652  
 b Beeswax. 654  
 c Starch. 658  
 25 Nugent, Mr., Cape Coast.—Arrow-root. 658  
 26 Melton, W.—Colored starch. 658

## Textile Substances of Vegetable or Animal Origin.

- 27 Colonial Government.—Fibres of bamboo, pineapple, etc. 666

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# MAURITIUS.

(North of North Avenue, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

### Manufactures, Education and Science, Agriculture.

<b>Chemical Manufactures.</b>		
1 Lemiére, A.—Salt.	500	
<b>Clothing, Jewelry, and Ornaments; Traveling Equipments.</b>		
2 Foucaud, Mme. Vve.—Slippers, cigar case, baskets, etc., made of Palmiste leaves.	254	
<b>Medicine, Surgery, Prothesis.</b>		
3 Boulton, L.—Medicinal plants.	272	
<b>Educational Systems, Methods, and Libraries.</b>		
4 Boulton, L.—Transactions of the Royal Society of Arts and Sciences of Mauritius, from 1870 to 1875. Book on medicinal plants of Mauritius.	305 306	
5 Kyshe, J.—Mauritius Almanac, 1874.	306	
<b>Photography.</b>		
6 Moco, S.—Photographs.	430	
<b>Arboriculture and Forest Products.</b>		
7 Horne, J.—Mauritius Botanical Gar- dens; native woods.	600	
<b>Agricultural Products.</b>		
8 Flore Mauricienne.—Vanilla.	623	
9 Bouton, H. & E.—Mauritius coffee.	623	
<b>Animal and Vegetable Products.</b>		
10 Mauritius, Flore Mauricienne.— Preserved fruit.	656	
11 Marie, François.—Arrowroot.	658	
12 Wishe, J.—Sugars.	659	
<b>Textile Substances of Vegetable or Animal Origin.</b>		
13 Brugada, L. de, & Boucherville, E. de.—Ramic.	666	
14 Horne, J., Mauritius Botanical Gar- den.—Fibres, etc.	666	

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

# QUEENSLAND.

(North of North Avenue, Columns 10 to 15.)

## COLLECTIVE EXHIBIT.

### Manufactures, Education and Science, Art, Agriculture.

#### Chemical Manufactures.

- 1 Berkley & Taylor, Brisbane.—Dugong oil. 201
- 2 Ching, John.—Dugong oil. 201
- 3 Daintree, Richard.—Essences from Queensland vegetables. 203

#### Ceramics—Pottery, Porcelain, Glass, etc.

- 4 Mount Marley Co.—Fire brick. 207

#### Silk and Silk Fabrics.

- 5 Chubb, C. F., Ipswich. 242
- a Reeled silk. 242
- b Manufactured silk. 243

#### Medicine, Surgery, Prosthesis.

- 6 Clarke, David.—Eucalyptus medicinal preparations. 272

#### Hardware, Edge-tools, Cutlery, and Metallic Products.

- 7 Hipwood & Sutton.—Bells made of Queensland metal. 283

#### Carriages, Vehicles, and Accessories.

- 8 Queensland, Government of.—Saddlery made by prison labor. 296

#### Educational Systems, Methods, and Libraries.

- 9 Bailey, F. M.—"Ferns of Queensland." 306
- 10 Clarke, David.—Catalogue of plants and seeds. 306
- 11 Groom, W. H.—"Account of Toowoomba and Vicinity." 306
- 12 Hartmann, C. H.—"Fruits, Flowers, and Timbers of Queensland." 306
- 13 Hockings, A. T.—Catalogue of seeds and plants. 306
- 14 Hockings, A. J., Brisbane.—"Queensland Garden Manual;" "Horticulture in Queensland." 306
- 15 Diggle, Silvester.—"Ornithology of Australia." 306
- 16 Government Printing Establishment.—Bound books, pamphlets, and printed matter. 306
- 17 Lukin & Gresley, Brisbane.—Copies of the "Queenslander." 306

- 18 Mackay, Angus.—Works entitled "The Sugar-cane in Australia," "Semi-tropical Agriculturist and Colonist's Guide." 306

- 19 Proprietors of volumes of Queensland journals.—Journals with summary, prepared for the Centennial Exhibition. 306

- 20 Robertson.—Maryborough almanac. 306

- 21 Slotter, Geo., & Co.—Slotter's almanac. 306

- 22 Thorne & Greenwell, Brisbane.—Queensland almanac and directory. 306

- 23 Willmetts, Townsville.—Almanac of Northern Queensland. 306

#### Engineering, Architecture, Maps, etc.

- 24 Brisbane Tin Company.—Model showing strata of tin country. 335

- 25 Government Lithographic Establishment.—Maps, plans, charts, etc. 335

#### Photography.

- 26 Commissioners for Queensland.—Views of Ipswich, Rockhampton, Marlborough, Townsville, and Warwick. 430

- 27 Daintree, Richard.—Colored photographs. 430

- 28 Mackay, Angus.—Colonial views. 430

- 29 Wright, J. P.—Photographic views of Brisbane. 430

#### Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

- 30 Repetti, Joseph.—Model of quartz-crushing machine. 505

#### Arboriculture and Forest Products.

- 32 Daintree, Richard.  
a Collection of polished timbers. 600  
b Gums from Queensland vegetables. 603

- 33 Hill, Walter, Botanical Curator, Brisbane.  
a Collection of timbers in the rough. 600  
b Queensland nuts. 605  
c Bark for tanning. 602

- 34 Mackay, Angus.—Common timbers. 600

- 35 O'Shaunsey, P. A., Rockhampton.—Timbers of northern Queensland. 600

- 36 Pettigrew, William.—Pick and axe handles of Queensland woods. 602

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

## Agricultural, Animal, and Vegetable Products.

- 37 Carey, J. W.—Work-box of various finished woods. 601

## Agricultural Products.

- 40 Downs, George, Gowrie.—Barley. 620  
 41 Enderitch, H., Toowoomba.—Wheat. 620  
 42 Free, A., Warwick.—Wheat. 620  
 43 Free, George, Warwick.—Wheat. 620  
 44 Mackay, Angus.—Queensland maize. 620  
 45 Walker, R. F., Toowoomba.—Wheat, barley, and oats. 620  
 46 Grimes, S. & G., Brisbane.—Arrowroot. 622  
 47 Marks.—Arrowroot. 622  
 48 Tahey, F., Nerang.—Arrowroot. 622  
 49 Alexander, W. R., Redbank.—  
     a Coffee and tea. 623  
     b Castor oil seeds. 624  
 50 Boreham, J. H.—Chutney and spices. 623  
 51 Chubb, F. E., Ipswich.—Coffee beans. 623  
 52 Hill, Walter, Botanical Gardens.—Leaf tobacco. 623  
 53 Hocker, J. H., Brisbane.—Cigars, cigarettes, leaf and manufactured tobacco. 623  
 54 McFarlane.—Chili peppers. 623  
 55 Mahony, Albert River.—Leaf tobacco. 623

## Land Animals.

- 56 Richland, G., Cardwell.—Butterflies of northern Queensland. 638

## Water Animals, Fish Culture and Apparatus.

- 57 Ching, John, Wide Bay.—Dugong calf, preserved in spirits. 640

## Animal and Vegetable Products.

- 58 Stephens, T. B., Ekibin Tannery.—Leather and skins. 652  
 59 Ching, John, Wide Bay.—Dugong skull, tusks, etc. 652  
 60 Hayes, W. H., Candied pineapple, rockmelon, citron, ginger, lemon and orange peel. 656  
 61 Neden Bros., Toowoomba.—Flour. 657  
 62 Keates, F., Allora Mills.—Wheat, flour, and meal. 657  
 63 Black, Messrs., Moyea.—Sugar. 659  
 64 Brown, A. H., Antigua, Mary District.—Sugar. 659  
 65 Couldrey, W. H., Ageston.—  
     a Sugar. 659  
     b Rum. 660  
 66 Davey & Gooding, Beenleigh.—Sugar. 656  
 67 Davidson, J. E., Mackay.—  
     a Sugar. 659  
     b Rum. 660

- 68 Fryar and Strachan, Loganholme.—a Sugar. 659

- 69 Gibson & Sons, Clydesdale.—Sugar. 659

- 70 Superintendent of Penal Plantations.—Sugar. 659

- 71 Grimes, S. & G., Oxley.—Sugar. 659

- 72 Johnston, James, Helensfield, Doughboy.—Sugar. 659

- 73 Mackenzie, Gairloch.—Sugar. 659

- 74 Muir, Robert, Nerang.—Sugar. 659

- 75 Tooth & Cran, Zengarré.—Sugar. 656

- 76 Neame & Co., Herbert river.—Sugar. 659

- 79 Irwin Bros., Warrilla, Ipswich.—Wine. 660

- 80 Kirchner, Asmanhausen.—Wines. 660

- 81 Mauch, David, Warwick.—Wine. 660

- 82 Raff, George, Morayfield.—Rum. 660

- 83 Ramsey Bros., Lindah.—Whits spirits of wine. 660

- 84 Brocklemane, Brisbane.—Arrowroot biscuit. 661

- 85 Daintree, Richard.—Vegetable oils. 662

## Textile Substances of Vegetable or Animal Origin.

- 86 Mackay, Angus.—Queensland cotton. 662

- 87 Hill, Walter.—Collection of fibres. 666

- 88 McPherson, Alexander, Fortitude Valley.—Collection of Queensland fibres. 666

- 89 Clarke, George E., Talgai.—Fleece wool. 667

- 90 Davenport, G. H.—Merino wool. 667

- 91 Fenwick & Scott.—Australian wool. 667

- 92 Fisher, C. B., Headington Hill.—Merino wool. 667

- 93 Gore & Co., Yandilla.—Ewe fleece wool. 667

- 94 Green, C. H., Goomburra.—Fleece wool. 667

- 95 Gunn, Donald, Pikedale.—Wool. 667

- 96 Marshall & Slade, Glengallen.—Fleece wool. 667

- 97 North British Australian Co.—Fleece wool. 667

- 98 Parr, B. le, Chiverton.—Australian merino fleece wool. 667

- 99 Parr, B. C.—Fleece wool. 667

- 100 Shanahan & Jennings, Westbrook.—Merino wool. 667

- 101 Government Penal Establishment.—Silk worm cocoons. 668

- 102 Hine, Mrs., Ipswich.—Silk cocoons. 668

## Ornamental Trees, Shrubs, and Flowers.

- 103 Bailey, F. M.—Flora of Australia, and Botany of Queensland. 709



# ARCHIPELAGO OF SEYCHELLES.

(North of North Avenue, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

### Manufactures, Agricultural, Animal, Vegetable Products.

#### Furniture and Objects of General Use in Construction and in Dwellings.

- 1 Bouquet, Miss.—Teacups and saucers. 218

#### Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 2 Bouquet, Miss.  
a Straw hats and slippers. 251  
b Straw baskets, watch-pockets, and fans. 254  
3 Cayol, Mrs. Tony.—Bouquets of shell flowers. 254  
4 Bury, J. Ames.—Walking-canes. 254

#### Arboriculture and Forest Products.

- 5 Seychelles, Chief Commissioner of.—Samples of woods and planks. 600  
7 Briard, Mr., Praslin Island.  
a Black bark dye and samples of dyed stuffs. 602  
b Nuts. 605

#### Agricultural Products.

- 8 Houareau, Sylvain.—Tobacco. 623  
9 Madine, Mr.—Cigars. 623  
10 Lemarchand, Mr.—Cacao, cloves, coffee, and vanilla. 623

#### Water Animals, Fish Culture and Apparatus.

- 10a Beyron, F.—Turtle shell. 645

#### Animal and Vegetable Products.

- 11 Bouquet, Miss.—Coca de mer straw. 650  
13 Cauvin's Distillery.—White rum. 660  
14 Nageon, Mr., La Digue Island.—Cocconut oil. 662

#### Textile Substances of Vegetable or Animal Origin.

- 15 Brooks & Dupuy.—Cotton from Denis Island. 665  
16 Briard, Mr.—Cotton. 665

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# TASMANIA.

(South of North Avenue, Columns 13 to 15.)

## COLLECTIVE EXHIBIT.

### Manufactures, Education and Science, Art, Agriculture.

#### Chemical Manufactures.

- 1 Kermode, W. A., Mona Vale.—Salt. 200
- 2 Strachan, R., Cambridge.—Salt. 200
- 3 Colvin, Charles, Hobart Town.—Oil from mutton birds, from islands in Bass's Straits. 201
- 4 Coverdale, John, Port Arthur.—Red ochre, earth for paints. 202
- 5 Laughton, James, Hobart Town.—Earth for paints. 202

#### Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 6 Bidscope, J., Hobart Town.—Silk and felt hats and caps, with material of manufacture. 251
- 7 Tasmanian Commissioners.—Opossum and cat skin rugs. 256
- 8 Hull, H. M., Hobart Town.—Portraits of aborigines. 257

#### Weapons, etc.

- 9 Moir, J., Queenborough, Hobart Town.—Shot. 265

#### Educational Systems, Methods, and Libraries.

- 10 Hull, H. M., Hobart Town.—"Hull's Hints to Emigrants," parliamentary journals. 306
- 11 Nowell, E. C.—Books. 306
- 12 Tasmanian Commissioners.—News-papers and statistics. 306
- 13 Walch & Sons, Hobart Town.—Almanac and guide. 306

#### Scientific and Philosophical Methods and Systems.

- 14 Royal Society of Tasmania.—Meteorological tables. 320

#### Engineering, Architecture, Maps, etc.

- 15 Randall, A., Hobart Town.—Chart of waterworks. 330
- 16 Dibbs, T. F., Launceston.—Chart of Launceston. 335
- 17 Cemetery Commissioners, Hobart Town.—Chart of cemetery. 335
- 18 Moore, Hon. Wm., Hobart Town.—Geological map of Tasmania. 335

- 19 Walch & Sons, Hobart Town.—Charts of Hobart Town and Launceston. 335

- 19a Hull, H. M., Hobart Town.—Map of Tasmania. 335

#### Physical, Social, and Moral Condition of Man.

- 20 Walch & Sons, Hobart Town.—Tasmanian postage stamps. 345

#### Sculpture.

- 21 Carlsen, P. O., Port Arthur.—Carved ivory and wooden egg and cruet stand; carved ivory and myrtle Danish pipe. 405

#### Photography.

- 22 Bailey, H. H., Hobart Town.—Photographs. 430
- 23 Hobart Town, Corporation of.—Photographs of public buildings. 430
- 24 Launceston, Corporation of.—Photographs of public buildings. 430
- 25 Tondeur & Lempriere, Melbourne.—Photographs of the British and Tasmanian Charcoal Iron Company's (limited) Works in Tasmania. 430

#### Machines and Implements of Spinning, Weaving, and Paper Making.

- 26 Coverdale, J., Port Arthur.—Spinning jenny of Tasmanian myrtle. 521

#### Arboriculture and Forest Products.

- 27 Creswell, C. F., Hobart Town.—Forest tree seeds (340 varieties). 600
- 28 Gulliver Brothers, Hobart Town.—Tree seeds. 600
- 29 Hull, Hugh M., Hobart Town.—Polished Tasmanian woods. 600
- 30 Edwards, G. W., Hobart Town.—Grass-tree gum and resin, for varnish. 603
- 31 Mitchell, Mrs., Swansea.—Gum, from Oyster Bay pine. 603
- 32 Lipscombe, F., Sandy Bay.—Blue gum seeds. 605

#### Agricultural Products.

- 33 Dalgety, Moore, & Co., Launceston.—Wheat and oats. 600
- 34 Dean, W., New Norfolk.—Wheat. 600

## Agricultural, Animal, Vegetable Products.

- 35 Gibson, W., Hobart Town.—Wheat. 620  
 36 Harrap, A., Launceston.—Wheat. 620  
 37 Hogarth, D., Launceston.—Wheat. 620  
 38 Kemp, G., Upper Bagdad.—Wheat. 620  
 39 Archer, W. H. D., Longford.  
 a Wheat and English barley. 620  
 b Linseed. 624  
 40 Creswell, C. F., Hobart Town.  
 a Wheat, barley, oats, and rye. 620  
 b Peas and beans. 621  
 c Grass and other seeds. 624  
 41 Graves, J. W., Hobart Town.—Native bread. 621  
 42 Sharland, W. C., New Norfolk.—Hops. 623  
 43 Shoobridge, E., New Norfolk.—Hops. 623

## Land Animals.

- 44 Archer, W. H. D., Longford.  
 Cream-colored opossum, platypus. 637

## Water Animals, Fish Culture and Apparatus.

- 45 Salmon Commissioners of Tasmania.—Brown trout. 641  
 46 Davies, R. H., Torquay.—Tasmanian shells. 645

## Animal and Vegetable Products.

- 47 Coverdale, John, Port Arthur.—Seaweed, and jelly made therefrom. 650  
 48 Archer, W. H. D., Longford.—Native furs and skins. 652  
 49 Arnot, S., Bothwell.—Leather of kangaroo skins. 652  
 50 Gardner & McKenzie, Launceston.—Skins of kangaroo, tanned and dressed; native furs and skins. 652  
 51 Tasmanian Commissioners.  
 a Native furs and skins. 652  
 b Blue gum tree oil. 662  
 52 Holroyd, Kennedy, & Co., Hobart Town.—Jams and tart fruits. 656  
 53 Degraives, John, Hobart Town.—Malt. 657  
 54 Dossetor Brothers, Hobart Town.—Flour. 657

- 55 Gracie, William, Hobart Town.—Malt. 657

## Textile Substances of Animal or Vegetable Origin.

- 56 Archer, W. H. D., Brickendon, Longford.—Merino wool. 667  
 57 Brock, J.—Merino wool. 667  
 58 Cameron, Hon. Donald, Burnside.—Merino wool. 667  
 59 Gibson, James, Belle Vue, Cleveland.—Merino wool; portrait of stud sheep. 667  
 60 Gibson, W. H., Fairfield, Snake Banks.—Merino wool. 667  
 61 Gibson, W., & Son, Scone, Perth.—Merino wool; portraits of stud sheep. 667  
 62 Headlam, Charles, Egleston, Macquarie river.—Merino wool. 667  
 63 Keach, G. W., Chiswick, Ross.—Merino wool. 667  
 64 Lindley, G. W., Runnymede, Richmond.—Leicester wool. 667  
 65 McLanachan, Hon. James, Ballochmyle.—Merino wool. 667  
 66 Page, Samuel, Belle Vue, New Town.—Merino wool. 667  
 67 Parramore, Thomas, Beaufront, Ross.—Merino wool. 667  
 68 Ralston, John, Logan, Evandale.—Merino wool. 667  
 69 Searle, C.—Leicester wool. 667  
 70 Sharland, W. S., Woodbridge, New Norfolk.—Merino wool. 667  
 71 Shaw, Fred., Redbanks, Swansea.—Leicester wool. 667  
 72 Simmons, W. C.—Leicester wool. 667  
 73 Taylor, David, St. Johnstone's, Macquarie river.—Merino wool. 667  
 74 Taylor, G. Milford, Campbell Town.—Merino wool. 667  
 75 Taylor, John, Winton, Campbell Town.—Merino wool. 667  
 76 Wilson, George, Oatlands.—Merino wool. 667

## Agricultural Engineering and Administration.

- 77 Anglo-Australian Guano Company, Hobart Town.—Guano from Bird's Island. 681

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# TRINIDAD.

(South of North Avenue, Columns 15 to 17.)

## COLLECTIVE EXHIBIT.

### Minerals, Manufactures, Animal and Vegetable Products.

#### Minerals, Ores, Stone, Mining Products.

- 1 André, L. A. F.—Surface coals from the eastern coast. 101
- 2 Finlayson, Thomas A.—Asphalt, boiled and crude. 101

#### Furniture and Objects of General Use in Construction and in Dwellings.

- 3 Devenish, Syl., Surveyor General.—Gourd calabash. 224

#### Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 4 Trinidad, Government of.—Mats, fans, strainers, etc. 254
- 5 McAdam, Miss Venus.—Baskets made of gourds. 254
- 6 Devenish, Syl., Surveyor General.—Walking-sticks. 254

#### Hardware, Edge Tools, Cutlery, and Metallic Products.

- 7 Devenish, Syl., Surveyor General.—Razor strops. 281

#### Fabrics of Vegetable, Animal, or Mineral Materials.

- 8 Trinidad, Government of.—Baskets. 289

#### Arboriculture and Forest Products.

- 9 Prestoe, Hy., Government Botanist.—Collection of native woods. 600
- 10 Devenish, Syl., Surveyor General.—Samples of woods. 600
- 11 Trinidad, Government of.—Gutta-percha, liquid and solid. 603

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

#### Pomology.

- 12 Cumming, A., & Co., Port of Spain.—Cocoanuts. 611

#### Agricultural Products.

- 13 Prestoe, Hy., Government Botanist.—Nutmegs, cloves, mace, etc. 623
- 14 Needham, Sir Jos., San Antonio.—Cocoa. 623
- 15 Penco, Jos., La Merced.—Cocoa. 623
- 16 Cleaver, C., Verdant Vale.—Cocoa. 623
- 17 D'Abadie, St. L., St. Pedro.—Cocoa. 623
- 18 Flamant, Mrs. C.—Snuff of native tobacco. 623

#### Animal and Vegetable Products.

- 19 Prestoe, Hy., Government Botanist.—Preserved fruits. 656
- 20 Trinidad, Government of.—Cassari-p. 656
- 21 Flament, Mrs. Ch.  
a Farina and plantain flour. 657  
b Cassada starch. 658
- 22 Jenny, Miss.—Farina. 657
- 23 Colonial Company's Agency.—Sugar. 659
- 24 Seigert, Dr., Port of Spain.—Angostura bitters. 660
- 25 Somes & Co.—Cocoanut oil. 662
- 26 Devenish, Syl., Surveyor General.—Carap oil. 662

#### Textile Substances of Animal or Mineral Origin.

- 27 Somes & Co., Nariva Cocal.—Cocoanut fibre. 666
- 28 Devenish, Syl., Surveyor General.—Fibre from Agave vivipara. 666
- 29 Prestoe, Hy., Government Botanist.—Fibres. 666

## INDIA.

(North of Nave, Columns 22 to 25.)

## COLLECTIVE EXHIBIT.

## Chemicals, Ceramics, Woven Goods, Clothing.

## Chemical Manufactures.

**COLLECTIONS FROM THE INDIAN MUSEUM, BY J. FORBES WATSON, M.A., LL.D., DIRECTOR OF THE INDIAN MUSEUM, ETC.**

- a Rock salt from Salt range; salt from Poorthemank, Nellore, Toomlook, Balasore, Cuttack, and Jeypore; black salt from Calcutta; saltpetre from Cutch, Sarun, Bengal, Ahmednugger, Lahore, Central India, Ellore, Nellore, Cawnpore, Salem, Madras, and Calcutta; alum from Madras, Lahore, and Bengal; carbonate of soda from Lind and Calcutta; sulphate of iron from Salt range; borax from Thibet; sal ammoniac from Kurnal and Calcutta; sulphate of copper from Calcutta. 200
- b Gamboge from Bombay; indigo from South Arcot, Moorshedabad, Madras, and Shikarpore; cutch from Calcutta, Madras, and Burmah; gambler from Bombay and Malacca; lac dye from Jubbulpore and Malwa. 202

## Ceramics—Pottery, Porcelain, Glass, etc.

- c Ornamental tiles from Hyderabad. 208
- d Water vessels from Patna, Ghallawar, Madras, South Canara, and Allahabad; vase from Sindh; hookah bowl and bottom from Patna; cup, dish, and cover from Hyderabad; milk pan from Madras; goblet from Vizagapatam. 210

## Furniture and Objects of General Use in Construction and in Dwellings.

- e Copper and brass lamps, boxes, plates, dishes, basins, cups, etc., from Calcutta, Benares, Bengal, Bombay, Patna, Indore, Madras, Mirzapore, Travancore, Nepal, Cachar, and Poonah; betel plates inlaid with silver, from Hyderabad; copper amulet case from Thibet; brass spoon for oil from Madras. 224

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- f Phulpat mat from Travancore. 229
- g Muslin and cotton from Dacca and Madras. 230
- h Striped and checked cotton from Madras. 231

## Woven and Felted Goods of Wool, etc.

- i Cashmere and woolen carpets from Madras, Scind, and Ferahan. 239
- j Cashmere long and square shawls, net shawls, chuddahs, scarfs, burnouse, cravats, gold embroidered cloaks and table covers. 240

## Silk and Silk Fabrics.

- k Raw silk from Surdah, Berhampore, Bogra, Seetapore, and Bengal; Tusseh silk thread from Bengal, Gyah, and Bhargulpore; cocoons from Bengal and Cuttack; Eria silk thread from Rungpore and Assam. 242
- l Floss silk from Umritsur, Punjab, Vellore, Tatta, and Cashmere. 243
- m Striped and plain piece silk from Beerchoom, Hyderabad, Ahmedabad, Burmah, and Benares. 246

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- n Women's garments from Madras, Pegu, and Dharwar; men's garments from Gooaspore, Moulton, and Sindh; pinna silk skirt from Madras. 250
- o Embroidered shoes and turbans from Hyderabad, Gwallior, Sindh, Kotah, and Madura. 251
- p Nets, muslin, cloth, and silk embroidered in gold and colors from Sindh, Madras, Benares, Hyderabad, Delhi, Bhurtapore, and Bombay; gold, silver, white, and colored laces from Bombay, Nagpore, and Madras; handkerchief from Poona convent; doyleys from Madras. 252
- q Collection of jewelry from Bombay. 253
- r Dolls from Benares; fans from Madras, Delhi, Tipperah, South India, Poona, and Monghyr; chourie split ivory from Sylhet; chowrie, split sandal wood from Madras. 254
- s Leather box, embroidered with quill work, from Simla. 255

## Weapons, etc.

- t Spears, bows and arrows from Lahore, Delhi, and South India; velvet quivers and arm covers from Lahore; battle axes from Delhi and Nagpore; coat of mail from Punjab; daggers, swords, breastplates, etc., from Lahore, Burmah, Decan, Coorg, and Bengal. 258

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Manufactures, Education, Art, Agriculture.

## Medicine, Surgery, Prothesis.

- m* Barks, liquorice, opium, nux vomica, aconite, patchouli, tamarinds, anise, cardamom and croton seeds, cubebs, blistering beetles, juniper berries, aloes, and other medicinal products from Madras, Travancore, Bombay, Penang, Bengal, Mysore, North India, Malacca, and Calcutta. 279

## Hardware, Edge Tools, Cutlery, and Metallic Products.

- r* Copper bell from Burmah. 283  
*w* Lock and key from Indore. 284

## Fabrics of Vegetable, Animal, or Mineral Materials

- x* Baskets and cigar case from Madras; cane stands from Singapore; grass window shades from Travancore; papier-maché articles from Cashmere, Kurnool, and Sindh; lacquered wood work from Burmah and Sindh; japanned cabinet from Bareilly. 289

## Carriages, Vehicles, and Accessories.

- y* Model of state carriage from Poona. 292  
*s* Models of passenger and luggage carts, and palanquin from Bombay. 293  
*aa* Sikh saddle; velvet and gold trappings from Punjab. 296

## Educational Systems, Methods, and Libraries.

- ab* Books, "The People of India" and "The Textile Manufactures of India," by J. Forbes Watson, LL.D.; "Tree and Serpent Worship," by J. Fergusson, F.R.S.; "Ancient Buildings in Kashmir" and "Ancient Buildings near Muttra and Agra," by Lieut. H. H. Cole; "Primitive Tribes of the Nilagiris," by J. W. Brecks; Report on the Archaeology of West India, by J. W. Burgess. 306  
*ac* Stringed and wind instruments from Madras; kettle drum from Bengal; horn from Moorshedabad. 327

## Engineering, Architecture, Maps, etc.

- ad* Maps illustrative of Indian surveys; relief map of India. 335

## Sculpture.

- ae* Sculptured stone bull from Nandi. 400  
*af* Sculptures from the Amravati Toppe, viz.: base of large slab; panel figure of temple with Buddha seated; portions of frieze; figure standing; slab, Buddha's feet. 401  
*ag* Carved model of Burman chuttree, and sandal wood model of Hindoo temple from Booj; carved vase, sandal wood fan, and glove box from Bombay; carved stone idol, "Vishnu riding on Garuda" from Madras; carved wooden idols from Nepal; carved ivory box from Burmah; carved elephant with howdah from Berhampore; carved horn tazza from Gokah; carved plth figures from Trichinopoly, and carved horn drinking cup from Rutnagherry. 405

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.

## Photography.

- ah* Photographic views of India; photographs of races and tribes of Hindoostan; photographs of Indian architecture. 430  
*ai* Photo-lithographs illustrative of the textile fabrics of India. 432

## Ceramic Decorations, Mosaics, etc.

- aj* Inlaid marble boxes from Agra and Myhere. 450  
*ak* Inlaid wooden glove and work box from Bombay. 452  
*al* Card basket and box of porcupine quill work from Vizagapatam; casket and basket of Koftgari ware; miniature paintings on ivory, in carved sandal wood frames from Delhi; writing pads of ornamental painted leather from Kurnool; paintings on mica from Trichinopoly; samples of ornamental writing in colors. 454

## Aerial, Pneumatic, and Water Transportation.

- am* Models of passenger, ferry, coasting, and freight boats from Calcutta. 594

## Arboriculture and Forest Products.

- an* Ornamental and other woods 601  
*ao* Dye woods, barks, roots, and galls from Madras, Sindh, Cuttack, Nagpore, Burmah, and Singapore. 602  
*ap* Gums, resin, incense, gutta-percha, myrrh, etc., from Kaeppore, Gyah, Burmah, Madras, Pegu, Salem, Travancore, Malacca, Indore, and Bombay. 603

## Agricultural Products.

- aq* Wheat from Sindh, Punjab, Faridpur, and Bengal; barley from Belgaum, and other places; oats from Patna and Monghyr; maize from Northwestern India; millet; raggee; buckwheat from the Himalayas, illustrations of food plants of India. 620  
*ar* Peas, beans, lentils, and vetch. 621  
*as* Tea from Assam, Bishnath, Cachar, Dehra-Doon, Poonkabaree, Kangra, Kurnool, and other places; tea buds from Silcoorie; coffee from Aden, Bombay, Tinnevely, Paradise estate, and Chittagong; coffee berries from South India-Mysore, and Coorg; spices: pepper, ginger, mustard, curry powder, and turmeric from Bombay, Travancore, Indore, Dehra-Doon, Bengal, Nepal, Madras, and other places. 623  
*at* Coriander, dill, and fennel seed from Berar, Oudh, Faridpur, and Dharwar; waterlily stems from Sindh; oil seeds from Faridpur, Nagpore, Ahmednager, Bengal, and Indore; poppy seed from Central Provinces and Bengal; groundnuts from Berar, Indore, and Khandeish. 624

## Land Animals.

- au* Various kinds of silk worms of India from Cashmere, Bengal, and the Himalayas. 638

## Water Animals, Fish Culture and Apparatus.

- av* Pearl oysters from Kurrachee. 645  
*aw* Edible birds' nests from Ceylon; fish maws and sharks' fins from Bombay. 646

## Animal and Vegetable Products, Textiles, Machines.

## Animal and Vegetable Products.

- ar Glue from Cawnpore. 652  
 ay Beeswax from Travancore, Pegu, Ran-  
 goon, Singapore, and Chota Nagpore. 654  
 as Soojee flour from Madras; rice from Pun-  
 jab, Sindh, and Bengal. 657  
 at Arrowroot, tapioca, and sago. 658

## Textile Substances of Vegetable or Animal Origin.

- at Cotton from various parts of India, in its  
 different stages of growth and manufac-  
 ture. 665  
 ay Flax from Punjab; rheea stems and fibre  
 from Assam; brown hemp from Bombay;  
 Jubbulpore hemp; pineapple fibre from  
 Madras and Mangalore; aloe fibre from  
 Madras; Manila hemp; mat grass from

Bengal; illustrations of fibre-producing  
 plants of India. 666

- ad Sheep's wool from Bombay, Mysore, La-  
 dakh, and Bokhara; goat's wool from  
 Umritsur, Punjab, Turfan, and Yarkand;  
 camel's wool from Bokhara and Pun-  
 jab. 667

## Machines, Implements, and Processes of Manufacture.

- at Plow and yoke from Berar. 670  
 ay Native cotton gin from Bengal. 673

## Agricultural Engineering and Administration.

- at Models of water and cotton cart from  
 Bombay. 682

## CANADA.

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## Chemicals.

## Chemical Manufactures.

- 1 Cowan, A., Brockville, Ont.—Salt,  
 nitre cake; nitric, muriatic, and sulphuric  
 acids; sodium nitrate. 200  
 12 Geological Survey of Canada, Q.  
 a Salt, salt cake, salt gypsum cake, residue  
 for crystallizing pans, salt scales. 200  
 b Ochres. 202  
 14 Sharp, Jos. B., Apohaqui, N. B.—  
 Salt. 200  
 17 Cooper, Robert, Toronto, Ont.—  
 Washing crystals. 200  
 18 Lane, T. G., Hamilton, Ont.—Wash-  
 ing and bleaching crystals. 200  
 19 Saunders, Wm., London, Ont.  
 a Pharmaceutical preparations. 200  
 b Perfumery. 202  
 20 Lyman, Clare, & Co., Montreal, Q.  
 a Pharmaceutical preparations. One of the  
 longest established drug firms in the Do-  
 minion. Specialty—pure drugs. Also,  
 limeed oil crushers and paint grinders. 200  
 b Oil. 201  
 c Paints. 202  
 22 Lyman Bros. & Co., Toronto, Ont.  
 a Pharmaceutical and chemical prepara-  
 tions. 200  
 b Oil for paints. 201  
 c Paints in oil. 202  
 23 Wilson, John, St. John, N. B.—  
 Soaps. 201  
 24 Savage, Alfred, & Son, Montreal, Q.  
 —Oil. 201  
 25 Morse, Geo. D., & Co., Toronto, Ont.  
 —Soap, candles, tallow, lard, and oils. 201

- 26 Walker, J., Hamilton, Ont.—Soaps. 201  
 28 Hood, A. W., & Son, Montreal, Q.—  
 Soaps. 201  
 29 Albert Toilet Soap Co., Montreal, Q.  
 —Soaps. 201  
 30 Spinelli, R., Montreal, Q.—Para-  
 fine soaps. 201  
 31 Lyman, S. J., Montreal, Q.  
 a Phosphorus soap. 201  
 b Perfumery. 203  
 33 Waterman Bros., London, Ont.—  
 Hard and soft coke from petroleum, crude  
 and refined petroleum, paraffine oil, ben-  
 zine, axle oil, tar from petroleum, para-  
 fine scales. 201  
 36 Leeds Paint Manufacturing Co.,  
 Mallorytown, Ont.—Ferruginous rock and  
 paints. 202  
 39 Buchanan Mineral Co., Walsing-  
 ham, Ont.—Paints and colors. 202  
 40 McKay, William, Ottawa, Ont.—  
 Liquid drier for paint, printers' ink. 202  
 42 Ramsay, T., Montreal, Q.—Paints. 202  
 44 Ramsay, A., & Son, Montreal, Q.—  
 Paints. 202  
 45 Montreal Plumbago Mining Co.,  
 Montreal, Q.—Stove polish, crucibles. 202  
 46 Martin, Charles, Montreal, Q.—Stove  
 polish, crucibles. 202  
 48 Hall, G. B., Quebec, Q.—Ochres. 202  
 53 Copeland & McLaren, Montreal, Q.  
 —Iron oxide. 202

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Ceramics, Furniture, Woven Goods.

- 55 Thompson, G. F., & Sons, St. John, N. B.—White lead. 202  
 57 Edgett, W., Pudsey's Point, N. S.—Iron ochre. 202  
 58 Miller, Hugh, & Co., Toronto, Ont.—Pomade. 203  
 62 Manuvilling, J. J., Hampton, N. B.—Matches. 204

## Ceramics—Pottery, Porcelain, Glass, etc.

- 81 Pratt, Charles, London, Ont.—Pottery. 206  
 82 Ahren, J. H., Paris, Ont.—Pottery. 206  
 83 Bell, David, Little River, Q.—Drain tiles. 206  
 84 Mochan, Albert, St. John, Q.—Bricks. 206  
 86 Geological Survey, Montreal, Q.—Bricks. 206  
 87 Advisory Board, Quebec, Q.—Bricks. 206  
 91 Bell, W. & D., Quebec, Q.—Tobacco pipes. 206  
 93 Lee Brothers, St. John, N. B.—Bricks, drain tiles. 206  
 94 Smith & Kaye, Halifax, N. S.—Bricks, drain tiles. 206  
 8 Earthenware. 210  
 98 St. John Stone Chinaware Co., St. John, Q.—Stone chinaware. 210  
 99 Cape Rouge Pottery Co., Quebec, Q.—Crocery ware. 210  
 103 Booth, W., Toronto, Ont.—Sign painting on glass. 216  
 104 McAusland, J., Toronto, Ont.—Stained glass, figured work. 216

## Furniture and Objects of General Use in Construction and in Dwellings.

- 105 Hay, R., & Co., Toronto, Ont.—Sideboard. 217  
 107 Riley & May, Toronto, Ont.—Billiard tables, etc. 217  
 110 Kremer, C., Preston, Ont.—Furniture. 217  
 111 Murphy, A. A., Montreal, Q.—Store stools. 217  
 112 Roy & Co., Montreal, Q.—Invalid mechanical chair. 217  
 113 Reinhardt, C., Montreal, Q.—Combination spring-bottom bedstead. 217  
 114 Reid, R., Montreal, Q.—Marble mantelpiece. 217  
 115 Stephen, A., & Son, Halifax, N. S.—Secretary. 217  
 117 Drum Cabinet Manufacturing Co., Quebec, Q.—Parlor and bedroom sets, sideboard. 217  
 118 Whiteside, H., & Co., Montreal, Q.—Beds and mattresses. 217  
 121 Chapleau, Godfroi, Montreal, Q.—Fireproof safes, burglar-proof door. 217  
 122 Bennett, Jas., St. John, N. B.—Newspaper files. 217  
 123 Hutching & Co., St. John, N. B.—Mattresses. 217  
 127 Huber, Allen, Berlin, Ont.—Mirrors. 219

- 129 Ewing & Co., Toronto, Ont.—Mirrors. 219  
 6 Mouldings. 220  
 130 Dixon, A. H., Toronto, Ont.—Show cards. 229  
 131 Shantz, J. Y., Berlin, Ont.—Mirror. 219  
 132 Spence, John C., Montreal, Q.—Stained glass window. 219  
 135 Wade, J. M., Montreal, Q.—Ornament on glass and wood. 219  
 136 Cockburn, D., Ottawa, Ont.—Carved frame. 220  
 140 Brown, J. T., St. John, N. B.—Frames, book-rack. 220  
 141 Copp Bros., Hamilton, Ont.—Stoves. 222  
 6 Sad irons. 225  
 142 Moore, D., & Co., Hamilton, Ont.—Stoves, tubular lanterns. 222  
 143 Elliot, J. W., Toronto, Ont.—Stoves. 222  
 144 White, H. A., Hamilton, Ont.—Stovepipe damper. 222  
 146 Wexelburg & Co., Toronto, Ont.—Sheet metal elbows. 222  
 150 Harris, J., & Co., St. John, N. B.—Ship camboose and register grates. 222  
 6 Iron mantels. 227  
 151 Trudeau, P., Ottawa, Ont.—Gas burner, globe, and gallery. 223  
 154 Williams, J. M., & Co., Hamilton, Ont.—Tin and stamped ware. Manufacturers of plain, stamped, re-tinned and japanned tinware, tubular lanterns, etc. Price lists sent on application. 224  
 158 Penton, Thos., Sarnia, Ont.—Combined cooking and heating engine. 225  
 161 Elliott, T. C., Guelph, Ont.—Washing machine. 225  
 163 Lawlor & Co., Montreal, Q.—Washing machines. 225  
 164 Hall, G. B., Quebec, Q.—Washing machines. 225  
 6 Blinds, etc. 227  
 166 Cable, Bayard, & Co., Montreal, Q.—Clothes rack. 225  
 168 Foster, S. R., & Son, St. John, N. B.—Fireproof shutters. 225  
 171 Wood, T. M., & Co., Toronto, Ont.—Venetian blind. 227  
 174 Evans, Oscar C., Hamilton, Ont.—Blinds. 227  
 176 Fontaine, J., Montreal, Q.—Hot-house windows. 227  
 177 Wells & Co., Toronto, Ont.—Window fastener. 227  
 178 Fairbank, Hawes, & Co., St. John, N. B.—Doors, blinds, sash, turned work. 227  
 179 Wilson, Gilmour, & Co., St. John, N. B.—Marbleised mantels and grates. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 180 Dundas Cotton Mills Co., Hamilton, Ont.—Cotton fabrics. 230  
 181 Canada Cotton Manufacturing Co., Cornwall, Ont.—Domestics, tickings, bags, yarn, etc. 231



## Woven Goods, Clothing, Paper Work.

- 182 Smith & Wilby, Toronto, Ont.—  
Samples of cotton batts. 230
- 183 Woodworth, J. L., St. John, N. B.—  
Cotton yarns. 230
- 184 Parks, W., & Son, St. John, N. B.—  
White and colored cotton yarns. 230
- 185 Winger, H., Elmira, Ont.  
Canadian and Oxford gray cloth. 230  
Linen sheeting. 233
- 186 Stevens, A. J., & Co., Paris, Ont.—  
Floor oil cloth. 234

## Woven and Felted Goods of Wool, etc.

- 191 Toronto Tweed Co., Toronto, Ont.  
Tweeds. 235  
Flannels. 236
- 192 Rosamond Woollen Co., Almonte,  
Ont.—Cassimeres. 235
- 195 Mills & Hutchison, Montreal, Q.—  
Tweeds. 235
- 196 Paton Manufacturing Co., Sher-  
brooke, Q.—Cloths and tweeds. 235
- 197 Woodworth, J. L., St. John, N. B.—  
Woolen yarns. These 4-ply woolen yarns,  
chiefly for knitting purposes, are made of  
pure native wool, with special regard to  
durability. 235
- 198 Oxford Woollen Mills, Oxford, N.  
S.—Woolen goods. 235
- 199 Fisher, T. S., Toronto, Ont.  
Tweeds, buckskins, doeskins. 235  
Yarns. 238
- 200 Advisory Board, Victoria, Br. Col.  
Yarn made from wool of Rocky mountain  
goat. 235  
Indian blankets from wool of Rocky moun-  
tain goat. 237
- 201 Lomas, Adam, & Son, Sherbrook,  
Q.—Flannels. 236
- 202 Willett, S. T., Chambly, Q.—Flan-  
nels. 236
- 203 St. John Woollen Mills, St. John, Q.—  
Flannels. 236
- 203 Smith & Wilby, Toronto, Ont.—  
Fancy flannels. 236
- 204 Cantlie, Ewan, & Co., Montreal, Q.—  
Plain and fancy flannels. 236
- 205 Winger, H., Elmira, Ont.  
Blankets. 237  
White stocking yarn. 238
- 207 Wardlaw, J., Galt, Ont.—Woolen  
yarns. 238

Clothing, Jewelry, and Ornaments;  
Traveling Equipments.

- 210 Taylor, R. F., & Son, Toronto, Ont.—  
Full dress-suit, dress overcoat. 250
- 212 McCrae & Co., Guelph, Ont.—Knit  
goods and hosiery. 250
- 213 Ancaster Knitting Co., Hamilton,  
Ont.—Knitted and fancy goods. 250
- 214 Blacklock, W., & Co., Hastings,  
Ont.—Wool shirts and drawers. 250
- 215 Smith, H. H., Goderich, Ont.—  
Suits of Canadian goods. 250
- 216 Shorey & Co., Montreal, Q.—Ready  
made clothing. 250
- 217 Fisher, T. S., Toronto, Ont.—  
Shirts, pants, clouds, and scarfs. 250
- 218 Skelton, Tooke, & Co., Montreal,  
Q.—Shirts, collars, and cuffs. 250

- 219 Brown & Clagget, Montreal, Q.—  
Dresses. 250
- 220 Willis, E., & Co., St. John, N. B.—  
Paper collars and cuffs. 250
- 222 May, James S., St. John, N. B.—  
Ready-made clothing. 250
- 225 McKensie, Charlottetown, P. E.  
I.—Clothing. 251
- 228 Sussex Boot & Shoe Co., Sussex  
N. B.—Boots and shoes. 251
- 229 Sutherland, A., Kingston, Ont.—  
Boots and shoes. 251
- 231 King & Brown, Toronto, Ont.—  
Boots and shoes. 251
- 233 Moore, Th., Cooksville, Ont.—  
Wood models of boots and shoes. 251
- 235 Corestine, J., & Co., Montreal, Q.—  
Hats and caps. 251
- 237 Gentese, C., Montreal, Q.—Im-  
proved head conformateur. 251
- 238 Slater & Perry, Montreal, Q.—  
Boots and shoes. 251
- 239 Cloutier, George, Pointe Levis, Q.—  
Shooting boots. 251
- 242 Ramsay, D., Cobourg, Ont.—Boots  
and shoes. 251
- 244 Dominion Suspender Co., St. Ste-  
phens, N. B.—Gents' and youths' suspend-  
ers. 251
- 260 Saunders, S., Guelph, Ont.—Carved  
walking-canes. 254
- 261 Shantz, J. Y., Berlin, Ont.—Vege-  
table ivory buttons. 254
- 263 Lavoie, M., Montreal, Q.—Hair  
work. 254
- 264 Leblanc, J. H., Montreal, Q.—  
Fancy feathers. 254
- 265 Clarke, U. E., & Co., Toronto, Ont.—  
Trunks, valises, and bags. 255
- 266 Taylor, Robert, Halifax, N. S.—  
Trunks. 255
- 267 Borbridge, S. & H., Ottawa, Ont.—  
Trunks. 255
- 268 Chisholm, W., New Glasgow, N.  
S.—Ladies' trunks. 255
- 269 Renfrew, G. R., & Co., Quebec, Q.—  
Furs, Indian work. 256
- 270 Reynolds & Volkel, Montreal, Q.—  
Complete set of furs. 256
- 271 Hudson Bay Co., Montreal, Q.—  
Furs. 256
- 272 Keiser, C., & Son, Halifax, N. S.—  
Furs. 256
- 273 Thibault, Lanthier & Co., Mon-  
treal, Q.—Furs. 256

## Paper, Blank Books, and Stationery.

- 278 Kilgoren Bros., Toronto, Ont.—  
Paper bags. 260
- 283 Wilson, J. C., & Co., Montreal, Q.—  
Paper bags. 260
- 284 Canada Paper Co., Montreal, Q.—  
Wrapping and printing paper and enve-  
lopes. 260
- 288 Warwick, Wm., Toronto, Ont.—  
School blank books, letter press. 261
- 289 Hunter, Rose & Co., Toronto, Ont.—  
Books printed and bound. 261
- 290 Brown Bros., Toronto, Ont.—Ac-  
count and pocket book binding. 261
- 291 Perrault, L., & Co., Montreal, Q.—  
Account books, printing. 261

## Weapons, Medical Appliances, Hardware, Brushes.

- 293 Dawson Bros., Montreal, Q.—  
Blank books, binding. 261
- 295 MacKinlay, A. & W., Halifax, N. S.—Blank books. 261
- 297 Stanton, M., & Co., Toronto, Ont.—Room paper hangings. 264

## Weapons, etc.

- 300 Meyer, F. W. Albert, Montreal, Q.—Small gun, light artillery. 266
- 301 Rawbone, J. L., Toronto, Ont.—Implements for breech and muzzle guns. 269
- 302 Stephens, R. E., Owen Sound, Ont.—Breechloading rifle. This rifle is remarkable for having only the minimum of motions, cock, load, and fire; the maximum of rapid fire is consequently attained. It has the side-hinge block breech. 269
- 303 Kilby, R. H., Montreal, Q.—Evans repeating rifle. 269
- 305 Egan, John, Halifax, N. S.—Case of guns and rifles. 269

## Medicine, Surgery, Prothesis.

- 307 Miller, Hugh, & Co., Toronto, Ont.—Tick destroyer for sheep. 272
- 310 Stewart, George, jr., St. John, N. B.—Ship's medicine chest. 272
- 311 Marter, F. B., Halifax, N. S.—Ship's medicine chest. 272
- 314 Canada Truss Factory, Montreal, Q.—Surgical apparatus, artificial limbs. 276
- 315 Pourtier, M., Quebec, Q.—Philodonte fountain. 277

## Hardware, Edge Tools, Cutlery, and Metallic Products.

- 316 Moore, Th., Cooksville, Ont.—Axe and tool handles. 280
- 318 Smith, R. H., & Co., St. Catherine, Ont.—Saws. 280
- 320 Dates Patent Steel Co., Toronto, Ont.—Edge tools. 280
- 322 Ahern & Walsh, Ottawa, Ont.—Lumbermen's tools. 280
- 323 Robertson, Peter, Ottawa, Ont.—Lumbermen's and stonecutters' tools. 280
- 324 Warnock, Jos., & Co., Galt, Ont.—Edge tools for wood, iron, and stone. 280
- 325 Booth, G., Toronto, Ont.—Engine and pipe wrench. 280
- 327 Chapleau, Godfroi, Montreal, Q.—Limestone cutters' tools. 280
- 328 Gilmoir, G., Cote St. Paul, Q.—Augers and bits. 280
- 329 Boivin & Co., New Liverpool, Q.—Axes and edge tools. 280
- 332 Spiller Bros., St. John, N. B.—Edge tools and cutlery. 280
- 335 Broad, E., St. John, N. B.—Axes, edge tools, hammers. 280
- 339 Morley, Victoria, Br. Col.—Carpenters' mallets, yew and arbutus. 280
- 340 Cable, Bayard, & Co., Montreal, Q.—Adjustable elastic razor strop. 281
- 341 Whelpley, J. Albert, Greenwich, N. B.—Skates. 281

342 Starr Manufacturing Co., Halifax, N. S.—Skates. Acme, Club, Forbes' patent, sold largely in Russia, Sweden, Norway, Denmark, France, England, and United States. Being self-fastening, it possesses great merit for convenience. Quality superior. 281

343 Fenerty, E. L., & Co., Halifax, N. S.—Skates. 281

344 Copp Brothers, Hamilton, Ont.—Enameled ware. 283

347 Laidlaw, A., & Co., Hamilton, Ont.—a Enameled hollow ware. 283  
b Enameled plumbers' ware. 284

349 Dixon, Smith, & Co., Toronto, Ont.—Sash fastener. 284

352 Campbell, Geo., Toronto, Ont.—Fireproof shutters. 284

353 Gibbs, Geo., & Co., Port Hope, Ont.—Nuts and bolts. 284

354 Law, John, London, Ont.—Brass work. Our mica slit lubricator will bear high pressure, is transparent, will not break. Our water-gauge glass guard and new mode of packing is very durable. Law's patent tar and petroleum burner demonstrates gas tar and petroleum tar as a good and handy fuel. A quarter-inch stream of tar will give fifty horse-power sure. 284

355 Griffith & Co., Toronto, Ont.—Locks and latches. 284

356 Brisley, W., Toronto, Ont.—Clip hook. 284

358 Stringer, Jos., Kingston, Ont.—Locks. 284

359 Cavern & Button, Gananoque, Ont.—Hinges and nails. 284

360 Ritchie, John, & Son, Toronto, Ont.—Brass work. 284

363 Pillow, Hersey, & Co., Montreal, Q.—Tacks, nails, spikes, horseshoes. American export agents and foreign visitors interested in this class of goods will do well to examine them. We endeavor to please all in executing orders intrusted to us. They can be sold at prices that must induce buyers. 284

365 Ives, H. R., Montreal, Q.—General hardware. 284

370 Belanger, Vinet, & Dupart, Montreal, Q.—Axles. 284

373 Foster, S. R., & Son, St. John, N. B.—Tacks, nails. 284

374 McKenzie, M., Prince Edward's Island.—Burglar-proof locks. 284

376 Starr Manufacturing Co., Halifax, N. S.—Nails, spikes, bolts, cans, dies. 284

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- 379 Gurd, J. R., London, Ont.—Corn broom and whisks. 286
- 381 Simms, T. S., & Co., St. John, N. B.—Brushes. 286
- 382 Whitehead & Turner, Quebec, Q.—a Brushes, brooms, dusters. 286  
b Fancy woodenware. 289
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## GERMANY.

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## Chemical Manufactures.

## Chemical Manufactures.

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GERMAN UNION OF MANUFACTURING  
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- 1 Ehlbaum, C. A. F., Berlin.
- 2 D'Andrian & Wegelin, Mülhausen.
- 3 Vorster & Grüneberg, Kalk, near Cologne.
- 4 Schuchardt, Theodor, Görlitz.
- 5 Koepf, Rud., & Co., Oestrich.
- 6 Saame & Co., Ludwigshafen.
- 7 Th. Wurtz's successors, Leipsic.
- 8 Von Heyden, F., Dresden.
- 9 Chemical Joint Stock Co., Berlin.
- 10 Jobst, Friedrich, Stuttgart.
- 11 Fischer & Schmitt, Höchst.
- 12 Brohme & Co., Bergen-on-Dosse.
- 13 Bartels & Kroyemann, Frohe.
- 14 Trommsdorff, H., Erfurt.
- 15 Lindenbauer, Otto, Hanau.
- 16 Marquart, L. C., Bonn.
- 17 Loeflund, Edward, Stuttgart.
- 18 Suhr, W., Altona.
- 19 Heyl, J. F., & Co., Berlin.
- 20 Sauberlich, Anton, Zwickau.
- 21 Bioedner's, Joh. Chr., Son, Gotha.
- 22 Hübner, B., Rehmsdorf.
- 23 Saxon Thuringian Joint Stock Co., Halle-on-Saale.
- 24 Ruffer & Co., Breslau.
- 25 Hiesgen, G. C., Nassmühle, near Hanau.
- 26 Gans & Leonhardt, Frankfort-on-Main.
- 27 Clever, Joh., Werden.
- 28 Aniline Manufacturing Co., Rummelsburg and Berlin.
- 29 Zeltner, Johann, Nuremberg.
- 30 Gysae, Robert, Oberlössnitz.
- 31 Ultramarine Works, Marienberg.
- 32 Kaiserslautern Ultramarine Works, Kaiserslautern.
- 33 Rosenstein, W., Stettin.
- 34 Vossen Bros., Aix-la-Chapelle.
- 35 Hirsch & Merzenich, Cologne.
- 36 Bayer, Fr., & Co., Barmen.
- 37 Johann Anton Farina, sur Stadt Malland, Cologne.
- 38 Mack, Ernst, Reichenhall.
- 39 Goedecke & Co., Leipsic.

- 41a Honigman, M. & Co., Aix-la-Chapelle.
- 42 Kluge & Pöritzsch, Leipsic.
- 42a Sieperman, C. F., & Son, Elberfeld.
- 43 Bernhardt, J., Leipsic.
- 43a Gebens, Ernst, Baden-Baden.
- 44 Brückner, Lampe & Co., Leipsic.
- 45 Sachse, E., & Co., Leipsic.
- 46 Haensel, Heinrich, Pirna-on-Elbe.
- 47 Wolff, F., & Son, Karlsruhe.
- 48 Langwisch, Bernh., Hamburg.
- 49 Lohse, Gustav, Berlin.
- 50 Wilhelm, F., Reudnitz.
- 51 Lüdér & Leidloff, Dresden.
- 52 Kunheim & Co., Berlin.
- 53 Haarmann, W., Holzminden.
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- 54 Nörr, Eugene, Berlin.—Siphon valve. 200

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- 54b Chemical Factory, Stassfurt.—Potassium salts, chloride of potassium, manure salts, etc. 200
- 54c Chemical Factory, Leopoldshall.—Chloride of potassium, sulphate of potash, glauber salts, etc. 200
- 54d Chemical Factory of Nett, Faulwasser, & Co., Leopoldshall.—Chloride of potassium. 200
- 54e Zimmer & Co., Stassfurt.—Artificial salts of chloride of potassium, manure salts, etc. 200
- 54f Lindemann, G., & Co., Stassfurt.—Chloride of potassium. 200
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- 59 Metz, Friedrich, Fürth.
- 60 Steeber & Segitz, Fürth.

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 62 Weidner, J. L. & P., Nuremberg.  
 63 Reich, H. & Chr., Nuremberg.  
 65 Eiermann & Tabor, Fürth.  
 67 Spiegelberger, Ludwig, Fürth.  
 68 Cramer, J. W., Fürth.  
 69 Beckh, Georg Adam, Nuremberg.  
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 138 Schlafhorst & Brühl, M. Gladbach.  
 139 Everling, Carl, & Co., M. Gladbach.  
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Woven shawls and dressing garments. 250  
130 Werner, John, Prague.—Men's  
clothing. 250  
131 Budan, Joseph, Prague.—Leather  
gloves. 251  
132 Eckstein Brothers, Prague.—Kid  
gloves. 251  
133 Engelmueller, Ferdinand, Prague.  
—Leather gloves. 251  
134 Habig, Peter, & Co., Vienna.—  
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135 Bancker, M., & Son, Prague.—Kid  
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136 Lörincz, Stephan, Budapest.—  
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137 Micka, Karl, Prague.—Leather  
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138 Pihat, Anton, Prague.—Leather  
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139 Pokorny, Karl, Prague.—Leather  
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140 Reichart, Adolf, Vienna.—  
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141 Repper, Joseph, Vienna.—Leather  
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- 143 Dewidela, Simon, Prague.—Kid  
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- 144 Stoger, Ludwig, Vienna.—Leather  
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- 145 Hauer, Carl, Brunn.—Leather  
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- 146 Straub, August, Prague.—Leather  
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- 147 Frese, Anton, Prague.—Kid  
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- 148 Steinhilber, Anton, Prague.—  
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- 149 Bencker, I. U., Prague.—Leather  
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- 150 Turnwald, Ch., Prague.—Leather  
gloves. 251
- 151 Brauneck, Edward, Vienna.—Leath-  
er gloves. 251
- 152 Beutel, Franz, Vienna.—Bath  
shoes made of plaited rushes. 251
- 153 Aue, Fred. v. d., and Kollmann,  
Prague.—Kid gloves. 251
- 154 Berg, S., Krakau.—Albumen for  
the manufacture of gloves, condensed  
yolks of eggs. 251
- 155 Roth, Franz, Prague.—Leather  
gloves. 251
- 156 Suchy, Anton, Prague.—Leather  
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- 157 Schwarz & Son, Joh., Vienna.—  
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- 158 Vcelicka, August, Prague.—Kid  
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- 159 Haberkorn, George, Prague.—  
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- 160 Hameril, John, Funfkirchen, Hun-  
gary.—Leather gloves. 251
- 161 Hoffmann, Joseph, Prague.—  
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- 162 Irmenbach's successor, Gottlieb,  
Prague.—Kid gloves. 251
- 163 Kubik, Joh. Nep., Stuhlweis-  
sburg, Hungary.—Leather gloves. 251
- 164 Lowenstein, Adolf R., Vienna.—  
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- 170 Skriván, John, & Son, Vienna.—  
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- 171 Port, Alois, Vienna.—Leather  
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- 172 Bloch, E., & Sons, Brunn.  
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- 174 Martius, W., Vienna.—Leather  
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- 175 Korb, Vincenz, Graslitz, Bohemia.  
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- 176 Cserminska, Inocenta, Wianio-  
wcyk, Galicia.—Embroidery. 252
- 178 Richter, Edward A., Vienna.—  
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- 179 Schnabl, Joseph, Gossengrun, Bo-  
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- 181 Ullmann, J. F., Neudeck.—Laces.  
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- 182 Dörner, Emilie, Bosing, Hungary.  
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- 183 Erlbeck, Anton, Gossengrun.—  
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- 184 Horner, Anton, Gossengrun, Bo-  
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- 185 Schmidt & Sons, W., Vienna.—  
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- 186 Fritsch, Joseph, Gossengrun.—  
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- 187 Lapaine, Caroline, Idria.—Bobbi-  
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- 189 Mettner, Bernhard, Graslitz, Bo-  
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- 191 Menzel, W. E., Teplitz, Bohemia.  
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- 196 Markowitsch & Scheid, Vienna.—  
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- 197 Neustadt, M. H., Prague.—Garnet  
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- 199 Bolzani & Fussi, Vienna.—Gold  
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- 200 Bergmann, Franz, Gablons.—Imi-  
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- 202 Rodek Brothers, Vienna.—  
Bronze and leather jewelry. 253
- 205 Kersch, Moritz, Prague.—Garnet  
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- 207 Ulbrich, Franz, Ober-Kukan, near  
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- 209 Hofrichter's Son, Joseph, Reich-  
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- 213 Schadelbauer, Vincenz, Vienna.—  
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- 216 Baudissin, Countess Pauline, Vi-  
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- 217 Turners' Sample Office, Vienna.—  
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- 223 Karuschke, Joseph, Vienna.—Mo-  
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- 227 Lux, Cl., Vienna.—Bronze arti-  
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- 228 Bergman, Franz, Vienna.—Bronze  
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- 237 Kemperling, Hermann, Vienna.—Turners' articles, pipes, cigar holders, canes. 254
- 241 Krehan, Ignaz, Vienna.—Mother-of-pearl buttons. 254
- 248 Kusel, John, & Jankowsky, C., Vienna.—Turners' articles, inkstand, cigar holder, ash bowls, watch holder, candle screens. 254
- 248 Umann, John, Tiefenbach, Bohemia.—Paper weights. 254
- 251 Wagner, Franz, Meistrsdorf.—Bronze articles. 254
- 252 Lederer, K., Gablons, Bohemia.—Glass trinkets. 254
- 254 Hartmann, L., & Eldam, Vienna.—Turners' articles, smoking requisites made of meerscham and amber. 254
- 256 Lukasch, L., Vienna.—Mother-of-pearl fancies. 254
- 256a Schneider, Wenzel, Prague.—Necessaries for the toilet, threading machines. 254
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- 271 Coffani, Maria, Vienna.—Parasols, fans, hats, and trinkets, made of straw. 254
- 272 Bauer & Pokorny, Vienna.—Meerscham pipes. 254
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- 278 Puschner, Franz Anton, Tyssa, near Bodenbach, Bohemia.—Metal buttons, brooches, sets of earrings, emblems, medals, decorative buckles. 254
- 279 Schwan, Wilhelm, Willendorf.—Mother-of-pearl buttons. 254
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- 285 Steindl, Carl, Vienna.—Mother-of-pearl buttons. 254
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- 298 Beihl, Franz, Vienna.—Bronze ware. 254
- 299 Frank, Joseph, Vienna.—Bronze ware. 254
- 300 Dziedziński & Hanusch, Vienna.—Bronze articles. 254
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- 302 Bohm, Ludwig, Vienna.—Bronze ware. 255
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- 307 Wielander, Peter, Vienna.—Mother-of-pearl buttons. 254
- 308 Bambula, John, Vienna.—Bronze goods, albums, writing portfolios, belts. 254
- 310 Unger, Franz, Vienna.—Portemonnaie, frames for manufacture of leather fancy goods. 255
- 315 Seewald, Michael, Vienna.—Leather ware and trinkets. 255
- 316 Rodek Bros., Vienna.—Leather articles. 255
- 317 Osterritter, Joseph, Vienna.—Leather articles. 255
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- 321 Flankowski Bros. & Twardy, Hielitz, Austria-Silesia.  
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- 322 Eichmann & Co., Arnau, near Prague.—Samples of paper. 259
- 323 Opitz & Son, Carl, Teplitz, Bohemia.  
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- 325 Knepper, W., Vienna.  
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- 327 Schoffel, Anton, Reichenau, Bohemia.—Papier-maché boxes. 262
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- 331 Ostersetzer Bros., Vienna.—Paper laces. 264
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- 333 Percussion Caps, Cartridge, & Breech Ring Factory, Prague.—Percussion caps, cartridges, and breech rings. 265
- Medicine, Surgery, Prothesis.**
- 334 Wilhelm, Franz, & Co., Vienna.—Drugs, medicinal herbs, volatile oils, etc. 272
- 335 Wartpatrikoff Bros., Vienna.—Insect powder. 272
- 336 Pollak, Jacques, Vienna.—Ether. 272
- 337 Zacherl, John, Vienna.—Insect powder and tinctures. 272
- 338 Hamerli, John, Funfkirchen, Hungary.—Leather trusses. 276
- 338a Politzer, Adam, Vienna.—Anatomical and pathologico-anatomical preparations. 276
- 339 Benhamner, Fr., Vienna.—Set of artificial teeth. 277
- 340 Perl, Joseph, Klausenburg, Hungary.—Teeth, sets of teeth. 277
- 341 Zsigmondy, Adolf, Vienna.—Teeth. 277
- Hardware, Edge Tools, Cutlery, and Metallic Products.**
- 343 Wertheim, Baron Franz, Vienna.—Complete representation of the Austrian tool manufacture. 280
- 344 Schneider, Wenzel, Prague.—Fine penknives. 281
- 346 Winkler, Alois, Vienna.—Cast zinc articles, plates, emblems, letters, and coat of arms. 283
- 347 Winkler, Michael, Vienna.—Cast metal signs and letters. 283

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348 Moravia Ironware Industry & Trade Co., Vienna.—Nails, screws. 284

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350 Schnek & Köhnberger, Vienna.—India-rubber goods. 285

351 Hausmann, Wilhelm, Reichenberg.—Rope articles, twine, cords, girths. 287

352 Kohl, August, Vienna.  
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b Five buckets for mills. 289

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356 Armbruster, Sebastian, Vienna.—Landau coach. 293

357 Bloch & Sons, E., Brunn.—Sole-leather saddle cloths. 296

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357b Isella, Pietro, Vienna.—Painting. 410

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357d Keeser, P., Vienna.—Engravings. 421

357e Bader, F. W., Vienna.—View of Vienna. 422

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358b Lott, Ludwig, Vienna.—Chromotypographs. 424

358c Reiffenstein & Rösch, Vienna.—Chromos. 424

358d Sieger, Edward, Vienna.—Lithographs. 424

358e Creiger, S., Vienna.—Chromos. 424

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359 Steinmetz, Franz, Petronberd, Illyria.—Inlaid work and veneer. 452

360 Egger, I. B., Villach, Karnten.—Inlaid work and veneer. 452

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361 Wuste, F., Vienna.—Cylinder coverings. 543

**Arboriculture and Forest Products.**

362 Frankl, J. G. & L., Vienna.—Wood specimens for the manufacture of furniture. 601

**Water Animals, Fish Culture and Apparatus.**

364 Nachtmann, Jacob, Tannwald, Bohemia.—Chamber leech aquariums. 640

**Animal and Vegetable Products.**

365 Zacherl, John, Vienna.—Cleaned sponges. 650

370 Ujhely & Co., H., Stockerau.—Wax. 654

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 17-45.

# SWITZERLAND.

(North of Nave, Columns 52 to 55.)

## Chemicals, Ceramics, Woven Goods, Silk.

### Chemical Manufactures.

- 1 Guyot-Lupold, A., Locle, Ct. Neuchâtel.—Chemical products, artificial black diamond, diamantine, powder of rubies, enamels for jewelry. 200
- 4 Amblet & Poncet, Geneva.—Oil for watches and instruments of precision. 201
- 5 Brunnschweiler, Traugott, St. Gallen.—Caseum for calico printing, caseum glue for cold glueing. 201
- 6 Vaucher, L., Peseux, near Neuchâtel.—Animal oil for chronometers and fine watches. 201
- 7 Bindschedler & Busch, Basle.—Raw materials for the manufacture of dyes, aniline dyes, artificial alizarine. 202
- 8 Brunnschweiler & Son, St. Gallen.—Printing inks, inks for Morse & Hughes' apparatus, extracts of ink in powder. 202
- 9 Durand & Huguenin, L., Basle.—Naphthaline, resorcline, fluorescine, cocene, phthaline and solutions, sefranine, galleine, ceruleine, steam blue, etc. 202
- 10 Bühler, Emile, Neuchâtel.—Hair regenerator, pomade, balsam, tooth-water, quinine-water. 203

### Ceramics—Pottery, Porcelain, Glass, etc.

- 11 Collin, Ch., Derendingen, Ct. Solothurn.—Watch glasses. 214

### Yarns and Woven Goods of Vegetable or Mineral Materials.

- 13 Billeter, C. G., Zurich.—Singed cotton threads, unbleached cotton sewing thread, cotton leash threads. 230
- 14 Brunner, A., Männedorf, Ct. Zurich.—White and colored bed-covers. 230
- 15 Gujer-Brunner, Uster, Ct. Zurich.—White and colored tricot bed-covers and table-cloths. 230
- 16 Oetiker, M. R., Männedorf, Ct. Zurich.—White and colored cotton bed-covers and table-cloths. 230
- 17 Schlaepfer, J. U., Waldstatt, Ct. Appenzel, Inner Rhodes.—Muslin. 230
- 18 Piers, Henri, Zurich.—Cotton goods. 231
- 19 Wallenstadt Fancy Cotton Goods Mills, Wallenstadt, Ct. St. Gallen.—Fancy cotton goods. 231
- 20 Piers, Henri, Zurich.—Turkey-red printed handkerchiefs, cashmere shawls, door-curtains, chintz. 232
- 21 Hanhart-Solivo, J., Dietikon, Ct. Zurich.—Cambrics, handkerchiefs, shawls, chintzes. 232

- 22 Asmoos Weaving Mills, Asmoos, Ct. St. Gallen.—Figured cotton goods. 232
- 23 Schneider, C. F., Dättlikow, Ct. Zurich.—Lint for hospitals, colored wadding for jewelry. 233

### Woven and Felted Goods of Wool, etc.

- 24 Munsinger, Conrad, Olten, Ct. Solothurn.—Felt of wool and cotton for paper mills, cylinder-cloth. 235
- 25 Siegenthaler, St., Enggisteln, near Worb, Ct. Berne.—Boots and shoes of felt, with and without wooden soles, felt soles, felt tablets for watch-makers, filtering bags, felt trimmings. 235
- 26 Ernat, Ferdinand, Winterthur, Ct. Zurich.—Goods of wool and mixtures of wool. 236
- 27 Schnyder, J. J., Wildenswil, Ct. Zurich.—Worsted horse-hair and fibre for mattresses and upholstery, bone-tails, bristles. 236

### Silk and Silk Fabrics.

- 28 Baumann, senior, & Co., Zurich.—Silks. 245
- 28a Zaelein & Müller, Basle.—Argal, silk waste, and fabrics of silk waste. 245
- 29 Baumann & Streuli, Horgen, Ct. Zurich.—Silks. 245
- 30 Dufour & Co., Thal, Ct. St. Gallen.—Silk bolting-cloth, silk grit-gauze. 245
- 31 Egli & Sennhauser, Zurich.—Silk bolting-cloth, middlings purifiers. 245
- 32 Frey-Feer, J., & Co., Aargau, Ct. Aargau.—Silk ribbons, faille, cord-edged taffetas, sarsenets, listons, satins. 245
- 33 Heidegger, Wegmann, & Co., Seefeld, Zurich.—Silk bolting-cloth. 245
- 34 Homberger Bros., Wetzikon, Ct. Zurich.—Silk bolting-cloth. 245
- 35 Jansen, Bodek, & Hertz, Riesbach, near Zurich.—Silks and satins. 245
- 36 Adlischweil Silk Goods Factory, Adlischweil, near Zurich.—Silks. 245
- 37 Winterthur Silk Goods Factory, Winterthur, Ct. Zurich.—Umbrella silks. 247
- 38 Meyer, Bros., Zurich.—Swiss silk bolting-cloth. 245
- 39 Reiff-Huber, Zurich.—Silk bolting-cloth. 245
- 40 Rütchi, S., & Co., Zurich.—Silks and satins. 245
- 41 Ryffel & Co., Stäfa.—Silks. 245



Silk, Clothing, Jewelry, Weapons.

- 49 Schärer, Emil, & Co., Zurich.—Silks. 245  
43 Schroder, Wilhelm, & Co., Zurich.—Silks. 245  
44 Schwarzenbach, Landis J., Thalweil, near Zurich.—Silks. 245  
45 Stapfer, Joh., Sons, Horgen, Ct. Zurich.—Silks. 245  
46 Stunzi & Sons, Horgen, Ct. Zurich.—Suits and satins. 245

Clothing, Jewelry, etc.

- 47 Blumer & Wild, St. Gallen.—Hosiery, ladies' fancy articles. 250  
48 Bourquin, C. F., Cormondrèche, near Neuchâtel.—Wool hosiery, jackets, and waistcoats. 250  
49 End-Ulmi, Ali., Lucerne.—Knitted under-garments. 250  
50 Hess, Gebr., Amrisweil, Ct. Thurgau.—Colored shirts and over-shirts. 250  
51 Huggerberger, U., Frauenfeld, Ct. Thurgau.—Hosiery. 250  
52 Meyer-Wespi & Co., Altstätten, near Zurich.—Knitted under-garments. 250  
53 Wikt, B., Lucerne.—Gentlemen's clothing. 250  
54 Bell, August, Kriens, near Lucerne.—Crimoline braids. 251  
55 Chiesa Bros., Locarno, Ct. de Tessin.—Braids and straw hats, Canton Tessin specialty. 251  
56 Eich & Co., Lenzburg, Ct. Aargau.—Horse-hair braids, straw-plaitings, cotton tress-work, borderings, hair-cloth. 251  
57 Indermühle, B. Th., Berne.—Straw hats. 251  
58 Isler, Aloyse, & Co., Wildegg, Ct. Aargau.—Hair and cotton plaits, fancy goods of hair, straw, cotton, and silk for hats and bonnets. 251  
59 Isler, Jacob, & Co., Wohlen, Ct. Aargau.—Straw goods. 252  
60 Walser, Conrad, Wohlen, Ct. Aargau.—Straw hats, plaits, and fancy articles of straw, crinoline, cotton, and manila hemp, tissues of straw, silk, and other materials for fancy boxes, sparterie, embroidery, and ornaments for bonnets. 252  
61 Alder Bros., Herisau, Ct. Appenzell, Inner Rhodes.—Hand and mechanical embroideries. 252  
62 Alder & Meyer, Herisau, Ct. Appenzell, Inner Rhodes.—Embroidered trimmings. 252  
63 Baerlocher-Custer, Rheineck, Ct. St. Gallen.—Embroidery, lace curtains, tidies, bed-covers, pillow-case covers. 252  
64 Basquin, Hector, & Schweizer, St. Gallen.—Machine embroideries. 252  
65 Bion & Tschumper, St. Gallen.—Mechanical embroideries. 252  
66 Fisch Bros., Buhler, Ct. Appenzell, Inner Rhodes.—Mechanical embroideries. 252  
67 Göldy, A., & Co., St. Gallen.—Mechanical embroideries, Hamburg edgings and insertions. 252  
68 Hirschfeld Bros. & Co., St. Gallen.—Swiss lace curtains. 252

- 69 Iklé Bros., St. Gallen.—Mechanical embroideries. 252  
70 Locher Bros., Speicher, Ct. Appenzell, Inner Rhodes.—Mechanical embroideries on silk. 252  
71 Wülfinger Machine Embroidery Establishment, near Winterthur, Ct. Zurich.—Colored embroidery by machinery, Hamburg edgings. 252  
72 Scheitlin & Widmer, St. Gallen.—Mechanical embroideries. 252  
73 Stüheli-Wild, C., St. Gallen.—Hand and mechanical embroideries. 252  
74 Steiger & Co., Herisau, Ct. Appenzell, Inner Rhodes.—Mechanical embroideries, lace curtains. 252  
75 Strauss, D., & Co., St. Gallen.—Lace curtains, drop laces, embroideries. 252  
76 Stursenegger & Rutz, Trogen, Ct. Appenzell, Inner Rhodes.—Cravats, edgings. 252  
77 Sutter-Dörig, R., Appenzell.—Hand and machine embroidery. 252  
78 Tobler, Uli., & A., Rheineck & Thal, Ct. St. Gallen.—Machine embroidery. 252  
79 Zähler & Schiess, Herisau, Ct. Appenzell, Inner Rhodes.—Hamburg edgings and insertions. 252  
80 Zellweger, J. C., Trogen, Ct. Appenzell, Inner Rhodes.—Mechanical embroideries. 252  
81 Drawing School of the Board of Trade, St. Gallen.—Embroideries executed from designs of the drawing school. 252  
82 Urech, E., Herisau, Ct. Appenzell, Inner Rhodes.—Mechanical embroidery. 252  
82a Zürcher-Bansiger, J., Teufen, Ct. Appenzell, Inner Rhodes.—Mechanical embroidery. 252  
83 Petit-Pierre & Bryson, Geneva.—Jewelry. 253  
84 Gay, Jean, Geneva.—Watch chains. 253  
84a Meylan & Mertens, Ed., Geneva.—Gold chains and chatelaines. 253  
85 Jaccard, Eugène, St. Croix, Ct. de Vaud.—Plate engraved with flowers, ornaments, and devices relating to the Centennial. 254  
86 Rohr, Walter von, A., Mümliswyl, Ct. Solothurn.—Combs. 254

Paper, Blank Books, Stationery.

- 88 Müller, Johs., Schaffhausen.—German, French, English, and Spanish playing cards, railway tickets. 262

Weapons, etc.

- 89 Swiss Manufacturing Co., Neuhausen, near Schaffhausen.—Vetterli-system, infantry and target rifles, blank cartridges. 265  
89a Schmidt, Major, Berne.—Rifle and revolver. 266

Medicine, Surgery, Prothesis.

- 90 Durieu, Oetli, & Co., Vevay, Ct. Vaud.—Milk-powder. 273

## Medical Appliances, Hardware, Animal and Vegetable Products.

- 91 Gerber & Co., Thun, Ct. Berne.—Condensed milk, children's food, medical condensed milk. 273
- 92 Lapp, C., Freiburg.—Food for children, condensed milk. 273
- 93 Naumann-Burkhardt, H., Basle.—Extract honey, syrup, and flour of meat. 273
- 94 Nestlé, Henry, Vevay, Ct. Vaud.—Milk food or lacteous farina. 273
- 94a Wander, G., Berne.—Extracts of malt and malt drops. 273
- 95 International Bandage-shiff Factory, Schaffhausen.—Dressings, lint, appliances for the dressing of wounds, pharmaceutical apparatus. 276

## Hardware, Edge Tools, Cutlery, and Metallic Products.

- 96 Spillmann, Heinrich, Unterstrass, near Zurich.—Engineering tools. 280
- 97 Schneider, C. F., Geneva.—Complicated pocket-knives. 280
- 98 Bürgin, Bros., Schaffhausen.—Up-holsterers' nails. 280
- 98a Le Coultre, Jacques, Sentier, Ct. Vaud.—Razors. 281
- 98b Bossi, Gaetano, Locarno, Ct. Tessin.—New system of safety locks. 284

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 99 Bally & Schmitter, Aargau, Ct. Aargau.—Elastic webs for boots. 285

## AGRICULTURE.

## Agricultural Products.

- 1 Anastasio, Giuseppe, Lugano, Ct. Tessin.—Cigars. 623
- 2 Kottmann, J., Solothurn.—Cigars. 623
- 3 Sauter, A., Diessenhofen, Ct. Thurgau.—Cigars. 623

## Animal and Vegetable Products.

- 4 Schleife Tannerien, Winterthur, Ct. Zurich.—Blackened calf leather. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 5 Hürlimann, J. J., Rapperswyl, Ct. St. Gallen.—Swiss honey. 654

- 6 Society for Bee Culture, Lukmanier, Sobrio, Ct. Tessin.—Honey and wax. 654

- 7 Coffee Surrogate Factory, Zurich.—Fig-meal (surrogate of coffee), conserved coffee. 656

- 8 Robbi & Co., Geneva.—Chocolate. 656

- 9 Schweigert, Auguste, Geneva.—Theodoro's sauce. 656

- 10 Suchard, Ph., Neuchâtel.—Chocolate, cacao. 656

- 11 Almen, von, & Kopp, Fleurier, Ct. Neuchâtel.—Absinthe. 660

- 12 Berger, C. F., Couvet, Ct. Neuchâtel.—Absinthe. 660

- 13 Bernhard, S., Samaden, Engadin, Ct. Graubünden.—Jva bitter, Jva perfume, and tincture. 660

- 14 Bolle, L. A., Son, Verrières, Ct. Neuchâtel.—Green and white absinthe. 660

- 15 Grandpierre, J., Geneva.—Vermouth. 660

- 16 Henny & Moulet, Fleurier, Ct. Neuchâtel.—Absinthe. 660

- 17 Kirschwasser Company Zug, Zug.—Kirschwasser. 660

- 18 Nievergelt, Joh., Maschwanden, Ct. Zurich.—Kirschwasser. 660

- 19 Pernod, Ed., Couvet, Ct. Neuchâtel.—Green and white absinthe, gentian-liquor, kirschwasser. 660

- 20 Scherer, Bros., Meggen, Lucerne.—Kirschwasser. 660

- 21 Schmidt, Joseph, Zug.—Sweet-liquors, righibitter, stomach-bitters, kirschwasser. 660

- 22 Stauffenegger, Chr., Travers, Ct. Neuchâtel.—Absinthe. 660

- 23 Gessler-Zeller, J., Basle.—Leckerly of Basle. 660

- 24 Mattmann, Brothers, C. & J., Horw, near Lucerne.—Italian pastry. 662

## BELGIUM.

(North of Nave, Columns 54 to 59.)

## Chemicals, Ceramics, Glass.

## Chemical Manufactures.

- 1 Hemptinne, A. de Son, Molenbeek, St. Jean, near Brussels.—Plan of apparatus for manufacturing sulphuric acid. 200
- 3 Meens, M. & J., Antwerp.—Refined sulphur. 200
- 4 Solvay & Co., Couillet, near Charleroi.—Chemicals, soda-salt. 200
- 6 Des Cressonnières (widow) & Son, Molenbeek, St. Jean, near Brussels.—Toilet soap. 201
- 8 Stass, Sproelants, Termonde, East Flanders.—Linseed, rape-seed, hempseed, cotton, and other oils. 201
- 9 Botelberge, Gustave & Co., Melle, near Ghent, East Flanders.—Ultramarine. 202
- 10 Gilkinet, C. J., Ensalval, near Verviers.—*Cachepoudill*, or special ink, to point out the defects on cloth and dyestuffs. 202
- 11 Lummersheim, M. H., & Co., Wondelgem, near Ghent, East Flanders.—Bituminous and re-asphaltic roof and ship sheathing paper, lampblack. 202
- 12 Olsfeld Bros., Forest, near Brussels.—Red, brown, and chestnut iron paint. 202
- 13 Planche, Edouard, Son, Laeken, near Brussels.—Writing ink. 202
- 14 Planche, Melchior, Ixelles, near Brussels.—Writing ink. 202
- 15 Singer, Max, Tournai (Hainaut).—Aniline products for dyes extracted from coal-tar, etc. 202
- 16 White Lead & Iron Paint Joint Stock Co., Anderghem, near Brussels.—Whitelead, iron paint, mastics. 202
- 17 Van der Velden, Leopold, Liège.—Writing, glossing, and indelible ink, liquid glue, etc. 202
- 18 Van Laer, Guillaume, Verviers.—Dyers' practical guide, mordant processes. 203
- 19 Marbaix, Auguste de, Antwerp.—Aromatic liquor, Anvers water, essential oil, caraway essence, cedar essence, Florentine iris, and oil of cloves. 203
- 20 Cooppal & Co., Wetteren, East Flanders.—Charcoal, sulphur, powder and cartridges. 204

## Ceramics—Pottery, Porcelain, Glass, etc.

- 23 Seilles les Andenne & Bouffoulx Joint Stock Co. of Refractory Products and Plastic Clay, Seilles, near Andenne,

Province of Liège.—Burnt refractory earthenware, brick for gas furnaces, etc., gas retorts, refractory plastic clay. 207

- 25 Wingender Bros., Chokier, near Liège.—White and colored clay pipes. 210
- 26 Floreffe Co., Floreffe, near Namur.—Plate glass for windows. 214
- 26a Schmidt Brothers & Sisters, Lodelinsart.—Window glass. 214
- 27 Andria, Lambert, & Co., Marchienne-au-Pont, near Charleroi (Hainaut).—White window and heavy muslin glass. 214
- 27a National Glass Works Joint Stock Co., Jumet.—Window glass. 214
- 28 Baudoux & Co., Charleroi.—White and colored window and unpolished and corrugated muslin glass, with variegated rosettes engraved and cut. 214
- 29 Baudoux, E., & Jonet, Lodelinsart.—Colored and fancy window glass. 214
- 30 Bennert & Bivort, Jumet, near Charleroi.—Window glass. 214
- 31 Bougard, A., Le Brum, H., & Co., Roux, near Charleroi.—Window glass. 214
- 32 Dorlodot, L. de, & Co., Lodelinsart.—Unpolished and corrugated window glass, greenhouse, cathedral, and stained glass, old glass imitation. 214
- 32a Leoper, de, Haldin, & Co., Courcelles.—Window glass. 214
- 34 Dessant, J., & Brys, Jumet.—Window glass. 214
- 35 Fourcault-Frison, A., & Co., Dampremy, near Charleroi.—Window glass. 214
- 36 Hans, Octave, & Co., Jumet, near Charleroi.—Window glass. 214
- 37 Lambert, Casimir, Son, Charleroi.—Window glass. 214
- 38 Lambert, L., & Co., Hamendes Glass Works, Jumet.—Window glass. 214
- 39 Leurant, Emile, Jumet (Helgne), near Charleroi.—Glass cylinder. 214
- 40 Mondron, Leon, Lodelinsart, near Charleroi.—Window glass. 214
- 41 Monnoyer, J., & Son, Dampremy, near Charleroi.—Window glass. 214
- 42 Morel, Alphons, Lodelinsart, near Charleroi.—Window glass. 214
- 43 Schmidt, A., & Co., L'Alliance Glass Works, Jumet (Brulotte), near Charleroi.—Window and fluted glass. 214
- 44 Schmidt, Devillez, & Co., Dampremy, near Charleroi.—Window glass. 214
- 45 Glass Works Joint Stock Co., Charleroi.—Window glass. 214

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 97-45.

## Glass, Furniture, Woven Goods.

- 46 Plate Glass Manufacturing Joint Stock Co., Courcelles, near Charleroi.—Clean polished and plated glass. 214
- 47 Hainaut Glass Manufacturing Joint Stock Co., Roux, near Charleroi.—Plate glass for windows, silvered glass, samples of plate glass at different stages of manufacture. 214
- 48 Glassware & Plate Glass Manufacturing Joint Stock Co., Brussels.—Framed plated and unplated mirrors. 214
- 49 Bougard, A., Manage (Hainaut).—Crystals. 216
- 50 Boussu, Familleureux & Blanc Misseron Glass Works Joint Stock Co., Boussu, near Mons (Hainaut).—Crystals and half crystals, dinner service, and articles for lighting. 216

## Furniture and Objects of General Use in Construction and in Dwellings.

- 51 Demeuter, Leopold, Son, Brussels.—Furniture and hangings. 217
- 52 Goyers, J. A. & H., Bros., Louvain.—Pulpit in the ogive style. 217
- 53 Snyers, Rang, & Co., Brussels.—Carved walnut furniture, renaissance style, ebony inlaid with ivory. 217
- 54 Teugels, Emile, Malines, Province of Anvers.—Carved furniture, a chair of the sixteenth century, a Flemish chair of the sixteenth century. 217
- 55 Zech, H., Malines.—Ebony bureau, arm-chair, and book-case. 217
- 56 Boucneau, Leon, Schaerbeek, near Brussels.—Marble mantelpiece, Belgian mosaic marble panels for dining-room decoration, brick pavement and Belgian mosaic marble table. 217
- 57 Guyaux Bros., Bouffoulx, near Charleroi.—Black marble, St. Anne mantelpiece. 217
- 58 Lintelo, A., Brussels.—Clocks and marble slabs. 217
- 59 Parmentier, Gosset, & Co., Sivy (Hainaut).—Marble mantelpieces with vases and clocks. 217
- 60 Tainsy, P., Brussels.—Marble mantelpieces. 217
- 61 Brodure, Mathieu, Spa.—Painted, varnished, and gilt wooden work. 219
- 62 Bronfort Bros., Spa.—Painted and ornamented wooden boxes, etc. 219
- 63 Debrus-Leclaire (widow), Spa.—Painted and ornamented wooden boxes, etc. 219
- 64 Debrus, Willem Alexandre, Spa.—Wooden boxes, etc. 219
- 65 Krins, E., Spa.—Wood carvings. 219
- 66 Van Ginderdeuren, Brussels.—Wood carvings, furniture. 219
- 67 Costermans, Jean, Brussels.—Hearth of the Flemish renaissance. 222
- 68 Miedel, Dieudonné, Sombreffe, near Gembloux, Province of Namur.—A brick layer ventilator for chimneys and coal-mine pits. 222
- 70 Seta, G. N., Director of the State Railroad.—A plan for utilizing the heat wasted by kitchen stoves, and a heating and ventilating system for passenger railroad cars. 222

- 71 L'Eclair Joint Stock Co., Kessel-Loo, near Louvain (Brabant).—Match tapers. 223
- 72 Pae, Gerard, Brussels.—Silver, copper, and bronze household utensils. 224
- 73 Tremouroux, N. & J., Bros., Saint Gilles, near Brussels.—Polished, varnished, bronzed, enameled, plated, and wrought iron household utensils. 224
- 74 Valania, Jean, Ixelles, near Brussels.—Machines for confectioners. 224
- 75 Vanderrest, Guillaume, Brussels.—Machine for the manufacture of sweet-meats. 224
- 76a Dogny, Jean Baptiste, Brussels.—Balusters, ornaments for door panels. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 77 Baertsoen, A., & Buysse, A., Ghent.  
a Cotton textile fabrics. 230  
b Linen textile fabrics. 233
- 78 Smet, E. de, & Co., Ghent.—Thread in packages; warped, unbleached and dyed skeins. 230
- 79 Desmet Bros., Ghent.—Dyed, bleached, and unbleached textile fabrics. 230
- 80 Parmentier, Van Hoegarden & Co., Ghent.—Spun cotton, bleached and unbleached printed cotton textile fabrics. 230
- 81 Devos, Camille, & Brother, Courtrai.—Stuff for trousers. 231
- 82 Idiers, Emile, Auderghem, near Brussels.—Spun cotton, dyed Adrianople red, etc. 231
- 83 Brandt, Jacques de, Alost.—Diapered and damasked table linen. 233
- 84 Declercq, Clement, Iseghem, East Flanders.—Twisted linen thread for machine and hand sewing. 233
- 85 Govaert Bros., Alost, East Flanders.—Canvas, sackcloth and bags for grain, guano, salt, etc. 233
- 86 Leirens-Ellaert of Eliaert-Cools, Alost, East Flanders.—Thread and tow for weaving, sewing thread. 233
- 87 Re ysenic, Brussels.—Linen fabrics. 233
- 88 Sak-Volders, Joseph, Turnhout, Province of Antwerp.—Pickings for beds and awnings. 233
- 89 La Lys Co., Ghent.—Jute and linen thread. 233
- 90 Van Damme Bros., Roulers, East Flanders.—Cloth. 233
- 91 Vande Wynckele Bros. & Alsberge, Ghent.—Tow and linen thread bleached, at every stage. 233
- 92 Wilford, William, Tamise, East Flanders.—Imperial extra flax, merchant and navy canvas; combed flax and thread for its manufacture. 233

## Woven and Felted Goods of Wool, etc.

- 93 Hauscur-Gerard, Son, Verviers.—Carded woolen thread. 235
- 94 Baras-Navaux, Verviers.—Cloth and woolen stuff. 235
- 100 Bettonville, Clement, Hodimont, near Verviers.—Cloth and woolen stuff. 235

## Woven Goods, Silk, Clothing, Stationery.

- 101 Biolley, François, & Son, Verviers.—Cloth and woolen stuff. 235
- 102 Biolley Bros. & Co., Juslenville, near Verviers.—Cloth and woolen stuff. 235
- 103 Chatten, M., & Co., Dison, near Verviers.—Cloth and woolen stuff. 235
- 104 Delhez Bros., Dison.—Cloth and woolen stuff. 235
- 105 Devosse-Blaise, Dison.—Cloth and woolen stuff. 235
- 106 Dolne, Lekeux, & Co., Dison.—Cloth and woolen stuff. 235
- 107 Domken Bros., Verviers.—Cloth and woolen stuff. 235
- 108 Dreze, H. & J., Dison.—Cloth and woolen stuff. 235
- 109 Franck Bros., Dison.—Cloth and woolen stuff. 235
- 110 Hawton, J. J., Dison.—Cloth and woolen stuff. 235
- 111 Herve, Fanchamps, Verviers.—Cloth and woolen stuff. 235
- 112 Lecloux, G. J., Dison.—Cloth and woolen stuff. 235
- 113 Lejeune-Vincent, H. J., Dison.—Cloth and woolen stuff. 235
- 114 Olivier, J. J., & Son, Verviers.—Cloth and woolen stuff. 235
- 115 Peltzer & Son, Verviers.—Cloth and woolen stuff, carded woolen thread. 235
- 116 Simonis, Iwan, Verviers.—Cloth and woolen stuff. 235
- 117 Tasté, J., Verviers.—Cloth and woolen stuff, carded woolen thread. 235
- 118 Wihl, M., & Co., Verviers.—Cloth and woolen stuff. 235
- 119 Jamme, Armand, Saint Hadelin, (Nessonvaux), near Verviers.—Carded woolen thread. 235
- 120 Begasse, Charles, Liège.—Felt for paper manufacture, rag-end fabrics, and woolen bed blankets. 237
- 121 Jacobs, Poelaert, & Co., Brussels.—Woolen bed blankets. 237
- 122 Rolin, H., Son, & Co., Saint Nicholas, East Flanders.—Tartan shawls, thin, light cloth, tweeds, waterproofs, lady cloth, fancy cloths, etc. 237
- 123 Braquenié Bros., Malin es.—Malin es tapestry. 239
- a Portrait of Rubens, panel from Gallait.
- b Portrait of Cousin, in Arabian costume.
- c Eight panels together, representing eight gods, from Olympus, with all their attributes, from Audran.
- d Full length painting—style Louis XVI.

## Silk and Silk Fabrics.

- 124 Fonteyn Bros., Lede, East Flanders.—Black silk goods. 245
- 125 Van Bellingen, Jos., Son, Antwerp.—Black silk cassimere, Antwerp silk and trimmings. 245
- 126 Van Bellingen, J. H., & Suremont, Max, Antwerp.—Antwerp black silk tissues. 245

## Clothing, Jewelry, etc.

- 127 Dujardin Bros., Leuze (Hainaut).—Cotton and woolen hosiery. 250

- 128 Leynen-Hougaerts, J. A. H., Peel, Province of Limbourg.—Church vestments, chasuble, and various embroideries. 250
- 128a Couvreur Sisters, Brussels.—Women's dresses. 250
- 129 Bouhon, François, Verviers.—Wooden and other shoes. 251
- 131 Frenay Bros., Roclenge-sur-Geer (Limbourg).—Braids and straw hats. 251
- 132 Level, Leon, Brussels.—Kid gloves. 251
- 133 Vandenberg-Poelman, G., Ghent.—Shoes. 251
- 134 Watrigant, Alphonse, Brussels.—Gentlemen's, ladies', and children's shoes. 251
- 135 Begerem, René, Ypres.—Valenciennes lace. 252
- 136 Crommelinck, Courtrai.—Lace. 252
- 137 Dassonville, Courtrai.—Lace. 252
- 138 Declercq-Clement, Iseghem, East Flanders.—Common lace of twisted thread. 252
- 139 Des Mares, P. T., Laken, near Brussels.—Lace. 252
- 140 Vergnies, O. De, & Sisters, Brussels.—Lace. 252
- 141 Duden Bros., Brussels.—Lace. 252
- 142 Everaert, Julie, & Sisters, Brussels.—White and black lace. 252
- 143 Bruyneel, senior, Grammont.—Black lace. 252
- 144 Groote, Vierendeel de, Grammont.—Black lace. 252
- 145 Everaert-Leclercq, Jules, Grammont.—Black lace. 252
- 146 Everaert Sisters, Grammont.—Black lace. 252
- 147 Ghys-Bruyneel, Grammont.—Black lace. 252
- 148 Leclercq (widow), Grammont.—Black lace. 252
- 149 Saligo-Vandenberghe, Grammont.—Black lace. 252
- 150 Gillon-Steyart, Courtrai.—Valenciennes lace. 252
- 151 Rectem, Jean, Brussels.—Gold embroidered picture. 252
- 152 Sacré, L., Brussels.—Lace. 252
- 153 Vandezande-Goemaere, Courtrai.—Valenciennes lace. 252
- 154 Verdé, Delisle Bros., & Co. (India Co.), Brussels.—Lace. 252
- 156 Coryn, Jules, Ghent, East Flanders.—Chignons and wigs. 254
- 157 Gossiaux, Félicien, Wavre (Brabant).—Hair picture. 254
- 157a Graf, Emile, Son, Liège.—Trunk. 255

## Paper, Blank Books, Stationery.

- 158 Vandamme, Pierre Jean, Brussels.—Proofs of steel engraving for stamping with colors, illuminated with gold and silver, chromographs and coats of arms. 258
- 159 Bruff, Pfeffer, & Co., Ghent.—Raw material for the manufacture of paper, worked and cleaned rags, and old paper. 259

## Weapons, Medical Appliances, Animal and Vegetable Products.

- 160 De Mesmaecker, Fr., Brussels.—Samples of bindery work. 261
- 161 De Tournay-Catala, Brussels.—Printing, writing, and wrapping paper, and pasteboard. 259
- 162 Poissonniet, Jean Baptiste, Brussels.—Cases for jewelers, confectioners, druggists, etc.; card of samples. 262
- 163 Daye, F., & Co., Scharbeek, near Brussels.—Pressed leather, pasteboard made from Cordoue and Malines old hides. 264

## Weapons, etc.

- 164 Fusnot, Charles, & Co., Cureghem, near Brussels.—Cartridges for weapons of every description. 265
- 165 Heuse, Ernest, Nessonvaux, near Liège.—Gun-barrels. 265
- 166 Mairiot & Heuse, Fraipont (Liège).—Gun-barrels for warfare and export. 265
- 167 Bayet Bros., Liège.—Fine weapons. 269
- 168 Neumann Bros., Liège.—Double-barreled hunting guns. 269
- 169 Tambour, Michel, Liège.—Hunting weapons. 269

## Medicine, Surgery, Prosthesis.

- 170 Depuy, Barthélémy, Brussels.—Pharmaceutical preparations, pamphlets on toxicology, pharmacy, and hygiene. 272
- 173 Guillery, Hippolyte, Brussels.—Sanitary report of the battle-field at Sedan in 1870; apparatus for the rapid dressing of wounds on the battle-field, etc., and for the treatment of limb fractures. 276
- 174 Hermant, Emile, Bruges.—Treatise on flying ambulances, model of ambulance bags adopted by the Belgian government, memoir of the military physician. 276
- 174a Buys, L., Brussels.—Car for the transport of the sick and wounded. 278

## Hardware, Edge Tools, Utlery, and Metallic Products.

- 175 Lambert, A. de, Liège.—Files for watchmakers and jewelers. 280
- 175a Jean, Emile de, Brussels.—Collection of iron and tools for horse-shoeing. 280
- 176 Constant, Emile, Monceau-sur-Sambre, near Charleroi.—Cheese-vat bolts, clamps for rails, rivets, tinkers' ware. 284
- 177 Demanet, Albert, Gosselies (Hainaut).—Forged nails. 284
- 178 Fondu, Jean Baptiste, Brussels.—Locksmiths' work, locks for vehicles, carriages, and railway cars; nickel ware used in construction. 284
- 179 Hoorickx, Guillaume, Brussels.—Two large chests—one representing an old-fashioned Flemish trunk, the other the present style. 284
- 180 Nicaise, Charles, Louvière (Hainaut).—Locomotive and other bolts, screws for locomotives, screw nuts, rivets, clamps for rails, etc. 284

- 180a Fix, A. J., Brussels.—Nails, rivets, etc. 284

- 181 Nicaise, Pierre & Nicolas, Marolles, near Charleroi.—Bolts, screw-nuts and rivets, spokes, and round-nose chisels, carriage tenders, clamps, etc. 284

- 182 Velings & Co., Chatelet, near Charleroi (Hainaut).—Iron wire, tacks, nails. 284

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 183 Ryckere, Edouard de, senior, Iseghem, East Flanders.—Brushes and pencils. 286

## Carriages, Vehicles, and Accessories.

- 184 Ruytter, Charles de, Ghent.—Carriages. 292
- 185 Van Aken, Louis, Aarsen.—Carriages. 292

## AGRICULTURE.

## Agricultural Products.

- 1 Le Bailly, D'Inghem, Viscount Arthur John, Villeneuve, Switzerland.—Cereals cultivated in a sandy soil. 600
- 2 Ameys Berte, Rodolph, Ghent.—Chicory, raw, in the pod, and manufactured. 623
- 3 Vandendaele-Rigot, Charles, Quévrain (Hainaut).—Ground mustard. 623
- 6 Delannoy, Nicholas, Tournai.—Chocolate. 623
- 6a Mottie, L., Brussels.—Tobacco and cigars. 623
- 7 Joveneau, Arthur, Tournai (Hainaut).—Powdered cocoa and chocolate; detail of chocolate manufacture. 623

## Animal and Vegetable Products.

- 9 Bodart, Ed., Louvain (Brabant).—Sheepskins, white leather, morocco, salted roans. 652
- 10 Baugniet, T., & Co., Brussels.—Crystallized blood. 652
- 11 Lebermuth, J., & Co., Brussels.—Waxed leather and goat skins. 652
- 12 Ocreman, L., & Witdoeck, E., Mechlin, province of Antwerp.—Varnished skins. 652
- 13 Schmits, F. A., & Co., Koekelberg, near Brussels.—Skins for hats; manufactured morocco leather. 652
- 15 Versé-Speimans, Brichot, Ant., & Co., Brussels.—Curried leather. 652
- 17 Remy & Co., Louvain (Brabant).—Starch and similar products. 652
- 20 Vandendaele-Rigot, Ch., Quévrain (Hainaut).  
a Pear, apple, and beet-root syrups. 659  
b Vinegar. 660
- 21 Charlier, John Baptist, Ghent.—Beer. 660
- 22 De Beukelaer, F. X., Antwerp.—Antwerp elastic, hygienic cordial. 660
- 23 Melkior, P. J., Brussels.—Liquors. 660

Agricultural Products and Machines.

24 Schaltin, Pierry & Co., Spa.—Cordial, mineral waters, etc. 660

25 Schmidt, Emile, Schaerheck, near Brussels.—Belgian bitter, cordial. 660

27 Bergh, van den, & Co., Antwerp.—Gin made from fine grains. 660

29 Wauters-de-Busscher, Mechlin, Province of Antwerp.—Cordials. 660

30 Damman, Edm., Borgehout, near Antwerp.—Ship biscuit. 661

31 Couvreur Sisters, Brussels.—Confections. 661

Textile Substances of Vegetable or Animal Origin.

32 Leclercq, Henry, Courtrai.—Flax. 665

33 Taulsz-Bottelier, Charles, Bruges, East Flanders.—Oakum, flax. 666

35 Müllender, S., Verviers.—Flocks of wool and shearings. 667

36 Delmotte, Hippolitus, Ghent.—White bristles. 669

Machines, Implements, and Processes of Manufacture.

37 Dassoaville de Saint-Hubert, L.-Namur.—Stones for grinding grain, cements, etc. 674

38 Vandendaele, Rigot, Charles, Quilvrain (Hainaut).—Steam machine for manufacturing chicory. 674

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# NETHERLANDS.

(North of Main Aisle, Columns 60 to 65.)

## Chemicals, Ceramics, Furniture, Woven Goods, Silk.

### Chemical Manufactures.

- 1 Matthes, W. E., Amsterdam.—Sulphate of ammonia. 200
- 2 Gorter, D. & S., Sneek.—Soap. 201
- 3 Willems, P. J., Schiedam.—Oils. 201
- 4 Souders & Co., Leyden.—Soaps. 201
- 5 Henny, C. O., Deventer.—Glue. 202
- 6 Van Calker, P. W., Utrecht.—Glue. 202
- 7 Verrocy & Van Heusde, Tiel.—Dyes, turpentine, inks, wax, colors, salves. 202
- 8 Grootes, M., Westzaan.—Blueing. 202
- 9 Leur, W., Schooten, near Haarlem.—Red lead made from iron ore. 202
- 10 Mills, M. A.—Inks. 202
- 11 Vriesendorp, H. M., Dordrecht.—Oils and varnish. 202
- 12 Lousbergh, V., Gravenhage.—Colors. 202
- 13 Van den Bergh, N. L. J., Arnhem.—Cologne. 203

### Ceramics—Pottery, Porcelain, Glass, etc.

- 14 Van Bergen, A. H., Heiligerlee, Province of Groningen.—Stone and drain tiles. 206
- 15 Van Henkelom, H. C., Utrecht.—Building stone. 206
- 17 Koolemans-Beijnen, C. G. L., Willeskop.—Architectural pottery. 206
- 18 Goedwaagen, P., Gouda.—Chemical stoneware and stoves. 207
- 19 Fontein, R., Franeker.—Roofing tiles. 208
- 20 Ravesteijn, H. F., Westraven.—Painted wall stone. 208
- 21 Bouvy, J. J. B. J., Dordrecht.—Glassware. 214

### Furniture and Objects of General Use in Construction and in Dwellings.

- 22 Nooijen, L. J., Rotterdam.—Furniture and fancy articles. 217
- 23 Van Vliet, W. F., Gravenhage.—Chairs. 217
- 24 Lowman, J., Zwolle.—Folding screen. 217
- 25 Van der Lugt, Gravenhage.—Furniture and fancy articles. 217
- 26 Lommen, C. H., Roermond.—Painted and cut glass. 219
- 27 Grolman, C. W., Utrecht.—Picture frames. 220
- 28 Batenburg & Co., Rotterdam.—Lamps. 223
- 29 Cool, G. Thz., Amsterdam.—Manicels. 227

### Yarns and Woven Goods of Vegetable or Mineral Materials.

- 31 Director of Prison, Utrecht.—Matting and rugs. 229
- 32 Ter Horst, J. H., Ryssen.  
a Jute matting. 229  
b Linen. 233
- 33 Arntsenius, Jannink, & Co., Goor.—Fish nets and yarn. 230
- 34 Hilversumsche Spinning & Weaving Manufactory, Amsterdam.—Spun and woven cotton goods. 230
- 35 Planteijdt, L., Krommenie.—Thread cloth and canvas. 230
- 36 Maassen Zonen, A. E., Scheveningen.—Fish nets. 230
- 37 Bottenheim, D. & S., Amsterdam.—Yarns. 230
- 38 Stork, C. F., Hengelo.—Colored woven goods. 231
- 39 Swinkels, W., Helmond.—Yarns. 231
- 40 Veltman, J. A., Jr., Amsterdam.—Covers and scarfs. 232
- 41 Veetman, J. A., Amsterdam.—Scarfs. 232
- 42 Elias, J., Strijp.—Table cloths, napkins, and dress goods. 233
- 43 Nieuwenhuizen & Van Stratum, Geldrop.—Towels, napkins, and table cloths. 233

### Woven and Felted Goods of Wool, etc.

- 44 Tilburg Woolen Manufacturing Co.—Flannels, opera cloaks, and fancy goods. 236
- 45 Zaalberg, J., Leyden.—Woolen covers. 237
- 46 De Lange, A. G., Delft.—Imitation Smyrna rugs. 239
- 47 Garjeanne, A. G., Delft.—Imitation Smyrna carpets. 239
- 48 Royal Carpet Manufactory, Deventer.—Deventer hangings. 239
- 49 Prins, M., Deveater.—Artificial wool and cowhair carpets. 239
- 50 Van Leer, B., Amersfoort.—Hangings. 239
- 51 Veelo, P. J., Gravenhage.—Sofa cloths. 241

### Silk and Silk Fabrics.

- 52 Travaglino, P. J. & W. J. P., Haarlem.—Silks. 244

### Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 54 Wienbelt, W., Deventer.—Boots. 251
- 55 Costermans, C., Jr., Gravenhage.—Trunks, satchels, and bags. 255

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



Stationery, Weapons, Medical Appliances, Hardware.

Paper, Blank Books, and Stationery.

- 66 Loeber, G., Amsteriam.—Stationery. 258  
 67 Abrahams Bros., Middleburg.—Blank books. 261  
 58 Simons, Ph., Gravenhage.—Bindings for maps, etc. 261  
 59 Cramer, H. G. D., Ootmarsum.—Pasteboard. 262  
 60 Van der Burgh, M., Schiedam.—Imitations of marble and wood. 264  
 61 Van der Burgh, A. R. & P., Rotterdam.—Imitations of marble and wood. 264  
 62 Rijperman, C. J. F., Velsen.—Wood painting. 264  
 63 Dobbe, J. P., Gravenhage.—Wood and marble painting. 264  
 64 Kerkhoven, R., Utrecht.—Wood and marble painting. 264

Weapons, etc.

- 65 Government Arm Manufactory, Delft.—Army rifle. 265  
 66 Betou, J. P. de, Delft.—Breechloading rifle. 265

Medicine, Surgery, Prothesis.

- 67 Van de Loo, J. P. H., Venlo.—Plaster and bandages. 276  
 68 Schokking, J. A. J., Amsterdam.—Conical tube for injections. 276  
 70 Krol, W., Kampen.—Plasters and bandages. 276  
 71 Mathijssen, A., Budel.—Plaster and bandages. 276  
 73 Gori, M. W. C., Amsterdam.—Water and land conveyances for sick and wounded. 278  
 74 Committee on Sick & Wounded Soldiers.—Work of the "Red Cross." 278

Hardware, Edge Tools, Cutlery, and Metallic Products.

- 75 Erdman-Schmidt, J. D., Helmond.—Cast engraving plates. 280  
 77 Enthoven, H. S., Zalt-Bommel.—Timed iron kitchen utensils. 284  
 78 Van Heukelom, H. C., Utrecht.—Machine screws. 284

Fabrics of Vegetable, Animal, or Mineral Materials.

- 79 Reus, N., Psn, Dordrecht.—House and ship brushes. 286

# NETHERLANDS EAST INDIAN COLONIES.

COLLECTIVE EXHIBIT.

Minerals, Manufactures.

Minerals, Ores, Building Stones, and Mining Products.

- 1 Netherlands Commission.  
 a Gold, quicksilver, lead, and hematite iron ores; sulphur, feldspar, quartz, porphyry, trachyte, obsidian, garnet rocks, talc, limy schist. 100  
 b Coal. 101  
 c Marble, granite, sandstone, syenite, diorite. 102  
 d Limestone. 103  
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 i Indigo. 202

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Yarns and Woven Goods of Vegetable or Mineral Materials.

- l Mats, fabric of beaten bark. 229  
 m Native cotton thread. 230  
 n Native calico. 232

Clothing, Jewelry, and Ornaments; Traveling Equipments.

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 p Native caps, headkerchiefs, plaited hats, and Chinese slippers. 251

## Manufactures, Agricultural Products.

- Lace, silk embroideries, embroidered handkerchiefs, etc. 252
- Silver filigree necklace, brooches, earrings, and bracelets. 253
- Artificial flowers, lacquered boxes, cases, fruits, etc.; nutmeg-tree made of feathers; flower baskets, cigar cases, vases, box, native boat and sedan chair made of cloves, book mark, tortoise-shell covers, models of Malay dwelling, chapel, rice barns, baskets, tea-set of silver filigree work, etc. 254

## Weapons, etc.

- Native weapons, small models of inland arms. 265
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## Hardware, Edge Tools, Cutlery, Metallic Products.

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- Rice knife. 281

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- Baskets, lacquered wooden box and trays. 289

## Arboriculture and Forest Products.

- Cotton reels; East Indian loom; trunks, roots, barks, etc., of various species of the cinchona tree; collection of native woods; leaves, fruit, and pulp of the vegetable tallow tree; samples of bamboo. 600
- Ebony, sapan, and fustic woods. 601
- Gutta-percha, gutta-gitang, gutta-soesoe, India-rubber, agar-agar, gum benjamin, camphor, dragon's blood, vegetable talc, etc. 603

- Wild nuts, binamoc, langa bidjan, leadoeri flue seeds, sapo ranto, fruit, preserved wild nutmegs, etc. 605

## Agricultural Products.

- Rices, hulled, unhulled, and in the stalk; millet, dragoning wheat. 620
- Bienkoero and tarok roots. 622
- Coffees, teas, cocoa, nutmegs, white and black peppers, mace, cloves, tobacco. 623

## Land Animals.

- Birds of Paradise.

## Marine Animals, Fish Culture and Apparatus.

- Tripang fish. 624
- Tortoises. 625
- Mother-of-pearl shells. 625

## Animal and Vegetable Products.

- Edible birds' nests. 626
- Tiger skins. 629
- Wax. 634
- Preserved victuals. 636
- Arrow-root, sente, ketella, red obi, talcs, aren, cassava, and potato flours. 637
- Sago. 638
- Sugars. 639
- Arrack. 660
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- Ramié flax, leaves, etc.; oakum; fibrous materials from trees and plants; rattan, samanboe pipit, and samanboe besar reeds. 666
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- Noordendorp, J., Amsterdam.—Photographs of the government cinchona establishments, and the Bouda Temple at Bore Beder. 430

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## DENMARK.

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## Chemical Manufactures.

- 1 Aalborg Chemical Works, Aalborg.—Bicarbonate and carbonate of soda. 200
- 3 Holmblad, L. P., Copenhagen.—Stearine candles. 201
- 3 Guldberg, C. Hoegh, Copenhagen.—Varnish, and wood polished with it. 202
- 4 Hansen, C., Copenhagen.—Cheese rennet extract and coloring fluid; butter coloring. 202
- 5 Meyer & Henckel, Copenhagen.—Butter and cheese coloring, cheese rennet extract, varnishes. 202
- 6 Riise, A. H., St. Thomas, West Indies.—Double-distilled bay spirit and oil of bay leaves. 203
- 7 Odense Match Factory, Odense.—Matches. 204

## Ceramics—Pottery, Porcelain, Glass, etc.

- 8 Hesse, Georg W., Copenhagen.—Terra-cotta vases, jugs, etc. 206
- 9 Ipsen's, P., widow, Copenhagen.—Terra-cotta vases, tazzas, figures, etc. 206
- 10 Wendrich & Son, Copenhagen.—Terra-cotta bas-reliefs, bowls, vases, etc. 206
- 11 Royal Porcelain Manufactory, Copenhagen.—Biscuit bas-reliefs after Thorwaldsen, exhibited by the Commission. 212
- 12 Argentine Manufactory, Copenhagen.—Porcelain covered with copper, silver, and gold. 213

## Furniture and Objects of General Use in Construction and in Dwellings.

- 13 Hansen, C. B., Copenhagen.—Furniture. 217
- 14 Meidel, P., Copenhagen.—Fire-proof safes. 217
- 15 Christesen, V., Copenhagen.—Silverware: large table ornament of silver, representing Art, Science, and Industry; tea and coffee sets, etc. 218
- 16 Stenstrup, Copenhagen.—Sign painting. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 17 Ramsing, Th., Aarhus.—Dyed linen fabrics. 233

## Woven and Felted Goods of Wool and Mixtures of Wool.

- 18 Müller, H., Faroe Islands.—Woolen goods. 235

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 19 Möller, C., Copenhagen.—Water-proof oil clothing. 250
- 19a Sorensen, C. P., Copenhagen.—Hand-sewed black coat, waistcoat, and pantaloons. 250
- 20 Larsen, N. F., Copenhagen.—Gloves. 251
- 21 Christesen, V., Copenhagen.—Jewelry and ornaments. 252
- 22 Assam, H. M., Odense.—Tobacco pipes, etc. 254
- 23 Ovre, Mrs., Copenhagen.—Artificial flowers. 254

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- 24 Holmblad, L. P., Copenhagen.—Playing cards. 252
- 25 Hansen, Carl, & Co., Ebeltoft.—Impregnated pasteboard. 262

## Hardware, Edge Tools, Outlery, and Metallic Products.

- 25a Engelbrecht, C., Copenhagen.—Pair of water-skates. 281

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- 1 Hveisel, G., Randers.—School maps. 300
- 2 Simonsen, C., Copenhagen.—"Punch," an illustrated paper. 306
- 3 Steenberg, A., Copenhagen.—"Industridenden," an industrial paper. 306

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- 4 Browning, Georg, Copenhagen.—Ethnographical collection, products, minerals, etc., from Iceland and Faroe Islands. 312
- 5 Müller, H., Faroe Islands.—Collection of birds, feathers, eggs, etc. 312
- 6 Harboe, C., Copenhagen.—Ethnographical collection; products, minerals, etc., from Greenland. 312

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Science, Art, Machinery, Agricultural Products.

## Scientific and Philosophical Instruments and Methods.

7 Bie, C., Aalborg.—Arithmometer. 322

8 Ferslew, C., & Co., Copenhagen.—Register for cars, etc. 323

## Engineering, Architecture, Maps, etc.

9 The Royal Staff, Copenhagen.—Topographical maps. 335

10 Steen, C., & Son, Copenhagen.—Geographical, historical, meteorological, and other maps. 335

## Sculpture.

10a Fjeldskov, V., Copenhagen.—Carving in wood, statuettes, medals, etc. 405

a Sailor.

b Viking.

c Crucifix.

d Peasant.

e Children.

f Friends.

g Spring.

h Thorwaldsen.

i Gøthe.

j Angelo.

k H. C. Andersen.

l Oersted.

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10b Ferslew, C., & Co., Copenhagen.—Lithographs. 413

## Industrial and Architectural Designs, etc.

10c Hetsch, Chr., Copenhagen.—Architectural designs. 441

## Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

1 Ambrosiussen, O. P., Copenhagen.—Model of a scaffold. 503

## Machines and Implements of Spinning, Weaving, Felting, and Paper-making.

2 Tullesen, P., Lyngby.—Hair-braiding machine. 524

## Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

3 Henriksen, H., Copenhagen.—Sewing machine. 531

## Machines for Printing, Making Books, Paper-working, etc.

4 Hansen, R. Malling, Copenhagen.—The tachygraph, operated by electricity, and the type-writing ball, operated by hand. 542

## Motors, Power Generators, etc.

5 Godfredsen, R., Copenhagen.—Belt-ing, etc., for transmission of power. 553

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Arboriculture and Forest Products.

1 Halkier, P. A., Copenhagen.—Timber, planks, boards, rough and finished, for buildings, etc. 503

## Agricultural Products.

2 Wendt, Frantz, Roeskilde.—Rye, winter and spring wheat, barley, and oats. 600

## Animal and Vegetable Products.

3 Danish Preserved Butter Co., Aarhus.—Canned butter for export. 651

4 Heymann, P. W., Copenhagen.—Preserved butter for export, also butter which was at the Vienna Exposition in 1873. 651

5 Copenhagen Leather Manufactory, Copenhagen.—Consolidated leather soles, heels, sheets, etc. 652

6 Pork Packing Co., Copenhagen.—Lard packed in bladder. 652

7 Eriksen, C., Lyngby.

a Honey and wax. 654

b Mead. 660

8 Müller, P. A. E., Copenhagen.—Honey and wax. 654

9 Herreborg, Otto, Copenhagen.—Preserved fruit, vegetables, jellies, etc. 656

10 Brøndum, A., Copenhagen.—Cora brandy and table liquor. 660

11 Aalborg Syrup & Spirit Factory, Aalborg.—Table liquor and spirit. 660

12 Anthony, F., Copenhagen.—Brandy and liquors. 660

13 Been, C. A., Copenhagen.—Liquors, etc. 660

14 Gottschalk, I. C., Holbak.—Essences. 660

16 Heering, Peter F., Copenhagen.—Cherry cordial. 660

17 Lorensen, L., Aarhus.—Bitter cordial. 660

18 Odin Distillery, Randers.—Cora brandy flavored with caraway seeds, table liquor, and rectified spirit. 660

19 Sabro, I. C., Randers.—Bitters, etc. 660

19a Farch, J., & Sons, Nibe.—Alcohol, raw spirits, and brandy. 660

20 Schucani & Wegmann, Copenhagen.—Liquors, bitters, etc. 660

21 Svanholm Brewery, Copenhagen.—Beer for export. 660

22 Ramsing, T., Aarhus.—Chocolate. 661

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## Machines, Implements, and Processes of Manufacture.

24 Schütz, Thurebyholm.—Model of milk cooler. 673

## Agricultural Engineering and Administration.

25 Aalborg Chemical Works, Aalborg.—Artificial bone manure. 680

## SWEDEN.

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## Chemicals, Ceramics, Furniture.

## Chemical Manufactures.

- 1 Aseptin Amykos Stock Co.
- a Upsala Aseptin, for preservation of provisions and animal materials. 200
- b Upsala amykos, used as a cosmetic. 203
- 2 Bengtsson, B., Astra Torp, Trelleborg.—Chemicals. 200
- 4 Friestedt, A. W., Stockholm.—Chemicals. 200
- 5 Gullberg Stock Co. (limited), Göteborg.—Sulphuric acid. 200
- 6 Liljeholmen Stearine Manufacturing Stock Co., Stockholm.—Stearine candles, oleine, glycerine, and stearine. 201
- 7 Sjöberg, A. P., Malmö.—Soaps. 201
- 8 Werner, C. O., Stockholm.—Bone oil. 201
- 14 Strandberg, Fr. Aug., Jönköping.—Varnishes, ink. 202
- 17 Granholm, J. P., Stockholm.—Rectified amykos. 203
- 18 Pauli F., Stockholm.—Essences, perfumery, cosmetics. 203
- 21 New Match Manufacturing Co. (limited), Stockholm.—Safety matches. 204
- 22 Berg, Gottfried Warby, Stockholm.—Gunpowder. 204
- 23 Blombacka Stock Co., Molkom.—Safety matches and their raw materials. 204
- 24 Gusta Match Manufactory, Stockholm.—Paraffined safety matches. 204
- 25 Holmberg, Eric, Södertelje.—Safety matches. 204
- 26 Jönköping Match Manufacturing Co. (limited), Jönköping.—Safety matches. 204
- 27 Kreuger, P. E., & Jennings, Kalmar.—Safety matches. 204
- 28 Ellbo Göteborg Match Factory, Göteborg.—Matches. 204
- 29 Lindahl, J. F., Kalmar.—Safety matches. 204
- 30 Lover Manufacturing Co. (limited), Kalmar.—Matches. 204
- 31 Norrköping Match Manufacturing Co. (limited), Norrköping.—Safety matches and appurtenances. 204
- 32 Stregnas Match Manufacturing Co. (limited), Stregnäs.—Safety matches. 204
- 33 Phoenix Match Manufacturing Co. (limited), Malmö.—Matches. 204
- 34 Vulcan Match Manufacturing Co. (limited), Göteborg.—Matches. 204

- 35 Westervik Match Factory, Westervik.—Matches. 204
- 36 Wisby Match Manufacturing Co. (limited), Wisby.—Matches. 204
- 37 Ystad Match Manufacturing Co. (limited), Ystad.—Safety matches. 204

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- 39 Helsingborgs Iron and Stone Ware Manufacturing Co. (limited), Helsingborg.—Salt glazed clay goods. 207
- 40 Högånäs Coal Mining Co., Högånäs.
  - a Fire clay goods. 207
  - b Tiles for pavements. 208
- 42 Gustafabergs Manufacturing Co., Stockholm.
  - a Architectural pottery. 206
  - b Faience. 210
  - c Biscuit ware and parian. 212
  - d Porcelain and Argentine. 213
- 43 Rörstrands Stock Co. (limited), Stockholm.
  - a Faience. 210
  - b Majolica and palissy ware. 211
  - c Biscuit ware and parian. 212
  - d Porcelain. 213
- 46 Malmö Porcelain Manufacturing Co., Malmö.—Porcelain for table use. 213
- 47 Bruswitz, Fr., Limmared.—Glassware. 215
- 48 Reymyre Glass Factory (limited), Reymyra.—Glassware. 215

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- 49 Backman, J. F., Stockholm.—Safe. 217
- 50 Glömska Manufacturing Co. (limited), Huddinge.—Cottage furniture. 217
- 51 Lastbom, Iven, Stockholm.—Cupboard of birchwood. 217
- 52 Peterson, C. E., Stockholm.
  - a Table. 217
  - b Frame. 220
- 53 Rambach, C. Stockholm.—Chair. 217
- 54 Rusch, P. O., Göteborg.—Japanned furniture. 217
- 54a Holm, F. F. W., Stockholm.—Furniture. 217
- 55 Sandberg, A. Cook, Stockholm.—Writing chair. 217
- 56 Wahlström, S. Fr., Stockholm.—Willow furniture. 217

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- 58 Bruzewitz, Fr., Limmared.—Table glass. 218
- 59 Goldsmiths' Stock Co. (limited), Stockholm.—Silver tankard. 218
- 60 Gustafberg Manufacturing Co., Stockholm.—Table china. 218
- 61 Reymyre Glass Factory (limited), Reymyra.—Table glass. 218
- 62 Rörstrand Stock Co. (limited), Stockholm.—  
a Table china. 218  
b Stoves. 222
- 64 Bolinders, J. & C. G., Machine Co. (limited), Stockholm.—  
a Heating apparatus. 222  
b Stove for smoothing-irons. 225
- 65 Hedengren, A. F., & Son, Eskilstuna.—Stove sets. 222
- 66 Eriksson, G., Eskilstuna.—Brass doors for stoves. 222
- 68 Moberg Machine Co., Stockholm.—Range. 222
- 73 Elfving, C. E., Stockholm.—Apparatus for cutting lamp wicks. 223
- 74 Kuntze & Co., Stockholm.—Water filters, refrigerators. 224
- 74a Källinge Iron Works, Ronneby.—Kitchen utensils of iron and steel sheets. 224
- 75 Lafquist, J. A., Eskilstuna.—Smoothing-irons. 225
- 76 Björk, J. O., Eskilstuna.—Hardware of mottled iron. 227
- 77 Dickson, James, & Co., Sandarne.—Woodwork for buildings. 227
- 78 Essen, Baron H. H. von, Tidaholm.—Woodwork for buildings. 227
- 79 Hedlund, Joh., Eskilstuna.—Metal work for buildings. 227
- 82 Wengström, J. O., Stockholm.—Manufactured parts of buildings. 227

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 83 Anderson, J., Kjärtingagårde, Gnosjö.—Wire and sieve cloth. 228
- 84 Berg, J. Th., Näs, Floda.—  
a Cotton yarns. 230  
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- 86 Malmö Manufacturing Co. (limited), Malmö.—  
a Cotton yarns. 230  
b Dyed cotton fabrics. 231
- 87 Rosenlunds Spinning Co. (limited), Göteborg.—Cotton yarns and fabrics. 230
- 89 Johansson & Carlander, Göteborg.—Calicoes. 232
- 90 Stenborg's, G., Widow, Jönköping.—Linen fabrics. 233

## Woven and Felted Goods of Wool, etc.

- 91 Bergsbro Stock Co., Norrköping.—Card-wool fabrics. 235
- 92 Drag Stock Co. (limited), Norrköping.—Card-wool fabrics. 235
- 93 Landskrona Manufacturing Co., Landskrona.—Card-wool fabrics. 235

- 94 Malmö Woolen Manufacturing Co. (limited), Malmö.—Card-wool fabrics. 233

- 95 Stockholm Woolen Manufacturing Co. (limited), Stockholm.—Woven and felted goods of wool. 233

## Silk and Silk Fabrics.

- 96 Almgren, K. A., Stockholm.—Plain woven silks. 245

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 98 Ek, J. A., Stockholm.—Military equipments. 250
- 99 Fernlund, E. F., Stockholm.—Military and civil clothing. 250
- 100 Heurlin, G. U., & Co., Stockholm.—Military clothing. 250
- 101 Royal War Office, Department of Investment, Stockholm.—Complete equipment of foot and mounted soldiers; specimens of cloth, linen, etc. 250
- 103 Swedmark, G., Malmö.—  
a Leather jackets. 250  
b Gloves. 251
- 104 Wallgren, A. R., Stockholm.—Military clothing. 250
- 105 Forsell, David, & Co., Stockholm.—  
a Hats and caps. 251  
b Furs. 256
- 106 Jacobson & Anderson, Malmö.—Gloves. 251
- 107 Svanberg, C. E., Jönköping.—Shoes. 251
- 109 Tornberg, Olof, Göteborg.—Boots and shoes. 251
- 110 Odberg, C. R., Stockholm.—Hunting boots. 251
- 111 Peterson, C. E., Stockholm.—Embroidered portrait of Washington. 252
- 112 Klintberg, J. W., & Co., Wisby.—Jewelry made of petrifications. 253
- 113 Anderson, J., Kjärtingagårde, Gnosjö.—Pins. 254
- 114 Berg, F. J., Göteborg.—Wigs, braids, and chignons. 254
- 114a Clarborg, T. A., Stockholm.—Jewel case. 254
- 116 Bergström, P. N., Stockholm.—Furs. 256
- 118 Royal Swedish Commission, Stockholm.—Life-size figures, dressed in national costume. 257

## Paper, Blank Books, Stationery.

- 119 Berggren, A. N., Stockholm.—Pen-holders of cork. 258
- 120 Brunell, J. E., Stockholm.—Pen-holders of common reed. 258
- 121 Klintberg, J. W., & Co., Wisby.—Letter-presses of petrifications. 258
- 122 Kullgren's, C. A., Widow, Uddevalla.—Letter-presses of polished granite. 258
- 123 Nordström, M. S., Stockholm.—Stamps for marking on linen or paper. 258
- 125 Munkell, J. H., Grycksbo, Falun.—  
a Filtering paper. 259  
b Wood pulp. 260

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- 127 Nynäs Pasteboard Factory, Nynäs, Mädda.—Pasteboard. 260
- 128 Lewenhaupt, Count, Sten, Wern-  
bohl, Katrineholm.—Wood pulp, chemi-  
cally prepared. 260
- 130 Malmö Wood Pulp Manufacturing  
Co. (limited), Delaryd, Elmblut.—Wood  
pulp, chemically prepared. 260
- 131 Munkedal Manufacturing Co. (Han-  
ted), Uddevalla.  
a Wrapping, bagging, and sketching paper. 260  
b Building papers. 263  
c Wall paper. 264
- 132 Munksjö Paper Factory, Jönköp-  
ing.—Wrapping paper. 260
- 133 Rosendahl Manufacturing Co.,  
Göteborg.—Paper pulp of wood and straw,  
paper. 260
- 134 Wargöns Stock Co., Rannum.—  
Printing paper for newspapers. 260
- 135 Litografiska Stock Co., Norr-  
köping.  
a Blank books, sets of account books,  
billheads, etc. 261  
b Playing cards. 262
- 136 Tidström, C. W., Stockholm.—Ac-  
count books, portfolios. 261
- 137 Djupafor's Manufacturing Co. (lim-  
ited), Ronneby, Djupafor.—Pasteboard;  
building paper. 262
- 138 Köhler & Co., Malmö.—Playing  
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- 140 Munksjö Paper Mill, Jönköping.  
—Building paper. 263
- 141 Edgren, Julius, Jönköping.—Wall  
paper. 264
- 142 Kaberg, C. A., Stockholm.—Wall  
paper. 264
- 143 Mineur, C. G., Stockholm.—Wall  
paper, imitation of leather, and ornaments  
of wood pulp. 264
- 145 Rosell, P. A., & Co., Jönköping.—  
Wall paper. 264

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- 146 Husqvarna Arms Manufacturing  
Co. (limited), Jönköping.  
a Military small arms, muskets, and revolv-  
ers. 265  
b Fire arms for sporting and hunting. 269
- 147 Royal War Office, Artillery De-  
partment, Stockholm.  
a Military small arms from the royal factory  
at Carl Gustafs Stad. 265  
b Field gun with carriage, ammunition car-  
riage, field forge. 266  
c Fortification ordnance with carriage and  
shots. 267
- 148 Motala Mechanical Works Co.  
(limited), Motala.—Hoops for guns. 266
- 149 Palmcrantz, Helge, Stockholm.—  
Mitrailleuse. 266
- 150 Ekman, Carl, Finspong, & De Maré,  
A., Ankarstrum.—Steel guns and shot. 267
- 151 Eskilstuna Iron Manufacturing  
Co. (limited), Eskilstuna.—Blades of  
swords, sabres, foils, and hunters' hangers.  
268
- 153 Norrström, C. A. & C. H., Eskils-  
tuna.—Hunting knives. 268

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- 154 Pitz, G., Stockholm.—Medicated  
gelatine. 272
- 155 Lamm, Axel, M., Stockholm.—  
Galvano-caustic apparatus, gynecologi-  
cal apparatus. 273
- 156 Royal War Office, Sanitary De-  
partment, Stockholm.—Surgical instru-  
ments for military use. 276
- 157 Stille, Alb., Stockholm.—Surgical  
instruments. 276
- 158 Zander, G., Stockholm.—Appa-  
ratus for mechanical gymnastics. 276

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Metallic Products.

- 159 Eskilstuna Iron Manufacturing  
Co. (limited).—Screw plates and  
hinges. 280
- 160 Liberg, B. & O., Rosenfors.  
a Edge tools. 280  
b Cutlery. 281
- 161 New File Manufactory, Eskils-  
tuna.—Files. 280
- 162 Oberg, C. O., & Co., Eskilstuna.—  
Files. 280
- 163 Fagersta Iron & Steel Works,  
Westanfors.  
a Saws. 280  
b Nails. 284
- 164 Uddeholm Stock Co. (limited),  
Räda.  
a Hand tools. 280  
b Springs and hardware. 284
- 165 Engström, Joh., Eskilstuna.—Ra-  
zors. 281
- 166 Gustafson, G., Eskilstuna.—  
Knives. 281
- 167 Halling, A., Eskilstuna.—Knives.  
281
- 168 Heljestrand, Christoffer, Eskils-  
tuna.—Razors, knives, and corkscrews.  
281
- 169 Ståhlberg, L. F., Ståhlfors.—Cut-  
lery. 281
- 170 Svalling, E. M., Eskilstuna.—  
Knives. 281
- 171 Söderén, F. W., Eskilstuna.—  
Knives. 281
- 172 Hedlund, Joh., Eskilstuna.—  
Locks. 284
- 173 Jernberg, S., Eskilstuna.—  
Latches. 284
- 174 Lafqvist, J. A., Eskilstuna.—  
Hinges. 284
- 175 Lagerbäck, H., Eskilstuna.—  
Locks. 284
- 178 Stenman, F. A., Eskilstuna.—  
Locks. 284
- 179 Strandberg, J., Eskilstuna.—Brass.  
284
- 181 Walén, Joh., Eskilstuna.—Locks.  
284
- 182 Johnson, A. & Co., Stockholm.—  
Cart springs. 281

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- 183 Kallinge Iron Works, Ronneby.—  
Nails. 284
- 183a New Gellivara Co. (limited),  
Luleå.—Nails. 284
- 184 Robson, Albert, Aspa, Askersund.  
—Oak spikes. 284
- 185 Sundström, J. O., Charlottenberg.  
—Nails. 284
- 187 Wiklund, W., Stockholm.—Brass  
hardware. 284

Fabrics of Vegetable, Animal, or  
Mineral Materials.

- 189 Tuxen, Louis von, Stockholm.—  
Fabrics of patent leather. 285
- 190 Olsson, M., Arnika, Lina.—Flower  
stand, willow chair and basket. 289
- 191 Kallinge Iron Works, Ronneby.—  
Galvanized iron vessels. 291
- 192 Karlskrona Galvanizing Stock Co.  
(limited), Karlskrona.—Galvanized sheet  
iron. 291

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



## NORWAY.

(North of Nave, Columns 4 to 7.)

## Textiles, Ceramics, Woven Goods, Clothing.

## Chemical Manufactures.

- 1 Bergen Gas Works, Bergen.—Sulphate of ammonia, raw and refined. 200  
 1 Bergen's Commercial Association, Bergen.—Cod-liver oil. 201  
 2 Borthen, J., Trondhjem.—Medical cod-liver oil. 201  
 3 Hansen, F., Aalesund.—Medical cod-liver oil. 201  
 4 Devold, L. C., Aalesund.—Medical cod-liver oil. 201  
 4 Henriksen, J. H., Tromsø.—Medical cod-liver oil. 201  
 5 Jordan, C., Trondhjem.—Medical cod-liver oil. 201  
 6 Møller, Peter, Christiania.—Cod-liver oil. 201  
 6a Bordewick & Co., Lynsvor.—Medical cod-liver oil. 201  
 7 Steen, Daniel, Christiania. 201  
 a Soaps. 201  
 b Essences, perfumery, pomades, cosmetics. 203  
 8 Holmen's, G. R., Technical Works, Fuglesang, Christiania.—Writing ink, asphaltum, diamond oil blacking, grease for leather. 202  
 10 Rode, C. N., Porsgrund.—Scandinavian ink, writing and copying, dark violet copying ink. 202  
 11 Pettersen, Andr., Bergen.—Hair dressing and perfumery. 203  
 12 Doms, Henrik, Christiania.—Matches from Bryn manufactory. 204  
 16 Jølsens, H., Match Manufactory, Christiania.—Matches. 204  
 17 Nitdals Match Manufactory, Christiania.—Safety and common matches. 204  
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| 1 Mineralogical Society of Naples.—<br>Sulphurous products. 200                              | 26 Scuderi, Giuseppe, Catania.—Cream<br>of tartar, zamba. 200                |
| 2 Salinella, Baron Michele, Nicosia,<br>Catania.—Rock salt. 200                              | 27 Rampassini, Frederico, Milan.—<br>Sulphur and chemicals. 200              |
| 3 Musumeci, Gulli Gaetano, Catania.<br>—Liquorice. 200                                       | 28 Solinas, Arras Giuseppe, Sassari.—<br>Olive oil. 201                      |
| 4 Giacomazzi, Favare Salvatore, Tra-<br>pani.—Sea salt. 200                                  | 29 Oneto, Agostino, & Co., Sampier-<br>darena, Genoa.—Soap. 201              |
| 5 Giacomazzi, Rocco, Trapani.—<br>Liquorice. 200   | 30 Agostini Della Seta, Count Alfredo,<br>Pisa.—Olive oil. 201               |
| 6 Martorana, Paladino S., Trapani.—<br>Sea salt. 200   | 31 Cenami, Count Bartolomeo, Lucca.<br>—Olive oil. 201                       |
| 7 Mazullo, Cav. Agostino, Mandanui,<br>Messina.—Rock salt. 200                               | 32 Mingori, Vincenzo, Lucca.—Olive<br>oil. 201                               |
| 8 Pirrone, Antonino, of Gaetano, Mes-<br>sina.—Liquorice. 200                                | 33 Tellini, Vincenzo, Calci, Pisa.—Olive<br>oil. 201                         |
| 9 Labonia, B. G., Naples.—Liquo-<br>rice. 200  | 34 Tellini, Dario, & Co., Cascina, Pisa.<br>—Olive oil soap. 201             |
| 10 Romano, Gaetano, Palermo.—<br>Salt. 200   | 35 Bonci, Casuccini Ottavio, Sienna.—<br>Olive oil. 201                      |
| 11 Ferrino, Cesare, Turin.<br>4 Nitrate. 200   | 36 Contucci, Eustachio, Montepu-<br>liano, Sienna.—Olive oil. 201            |
| 4 Colors in powder and paste. 202  | 37 Lanza Bros., Turin.—Stearine,<br>candles, soap. 201                       |
| 12 Baroncelli, Baldassarre, Cinciano,<br>Sienna.—Bicarbonate of potassium and<br>sodium. 200 | 38 Rinaldo, Raffaele, Salerno.—Olive<br>oil. 201                             |
| 13 Borelli, Luigi, late Tommaso, Asti,<br>Alexandria.—Cream of tartar, acids. 200            | 39 Guglielmini, Andrea, Salerno.—<br>Olive oil. 201                          |
| 14 Reimandi, Giuseppe, Acqui, Alex-<br>andria.—Cream of tartar, tartaric<br>acid. 200        | 40 Virgili, Angelo, Vacone, Perugia.<br>—Olive oil. 201                      |
| 15 Gentili, Grassini, late Giuseppe, Pa-<br>dua.—Cream of tartar. 200                        | 41 Rosselli Del Turco, Pier Francesco,<br>Florence.—Olive oil. 201           |
| 16 Sbertoli, Giuseppe, late Domenico,<br>Genoa.—Carbonate of lead. 200                       | 42 Capponi, Conti Bros., Florence.—<br>Olive oil. 201                        |
| 17 Candiani & Biffi, Milan.—Acids and<br>chemicals. 200                                      | 43 Alli Maccarani Claudio, Florence.—<br>Olive oil and paste of Zanza. 201   |
| 18 Emanuele, Francesco, Catania.—<br>Cream of tartar. 200                                    | 44 Corsini, Prince Tommaso, Florence.<br>—Olive oil. 201                     |
| 19 Grimaldi, Giovanni, Paterno, Sicily.<br>—Extract of liquorice. 200                        | 45 Merlini, Alfonso, & Enrico Bros.,<br>Terricciola, Pisa.—Olive oil. 201    |
| 20 Pastore, Gio., late Filippo, Catania.<br>—Juice of liquorice. 200                         | 46 Farinola, M. Paolo, Florence.—<br>Olive oil. 201                          |
| 21 Grasso, Giuseppe, Catania.—Juice<br>of liquorice. 200                                     | 47 Albergotti, Geo., & Agostino Bros.,<br>Arezzo.—Olive oil. 201             |
| 22 Catanzaro, Giuseppe, Termini, Pa-<br>lermo.—Liquorice paste. 200                          | 48 Raspigliosi, Prince Clemente, Lam-<br>povecchio, Florence.—Olive oil. 201 |
| 23 Lancia di Brolo, Duke Federigo,<br>Palermo.—Sea salt. 200                                 | 49 Chamber of Commerce & Arts,<br>Sienna.—Olive oil. 201                     |
| 24 Fonso, Domenico, Catania.—Cream<br>of tartar. 200   | 50 Saracini, Alessandro, Sienna.—<br>Olive oil. 201                          |
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- 59 Martinez, Filippo, Palermo.—Olive oil. 201
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- 61 Pacchiani, Eliseo, Passignano, Umbria.—Olive oil. 201
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- 70 Di Salvo, Salvatore, Messina.—Olive oil. 201  
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466 Bonini, Emilio, Pignone, Florence.  
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467 De Poli Bros., Vittorio, Treviso.—  
Brass church bell. 283

- 268 Ziaffi, Benedetto, Sienna.—Iron  
work. 283  
269 Parise, Achille, Sons, Naples.—  
Mechanical lock. 284  
270 Cane, Geremia, Bologna.—Tools  
for umbrellas. 284  
271 Namei, Giovanni, Florence.—  
Turned metallic articles. 284  
272 Olivieri, Luigi, Venice.—Hard-  
ware. 284  
273 Escoffier, Giuseppe Gio., Florence.  
—Mechanical articles. 284

Fabrics of Vegetable, Animal, or  
Mineral Materials.

- 274 Giacomini, Luigi, & Co., Treviso.—  
Brushes. 286  
275 Bargioni, Ferdinando, Florence.—  
Ropes of rush. 287  
276 Chamber of Commerce of Syra-  
cuse.—Ropes. 287  
277 Rosso, Leopardo Cav. Cesare,  
Comiso, Syracuse.—Ropes. 287  
278 Vincenzi, Paolo, Carpi, Modena.—  
Corks. 289  
279 Marchini, Cesare, Fiesole, Flor-  
ence.—Straw works. 289

## Carriages, Vehicles, and Accessories.

- 280 Sarette, Giuseppe, Palermo.—  
Lamps for carriages. 292  
281 Locati, Cav. Alessandro, Turin.—  
Carriages. (*In Annex.*) 292  
282 Mainetti, Francesco, Milan.—Car-  
riage (landau). (*In Annex.*) 292

## Sculpture.

- 283 Bazzantie, Figlio, Florence.—Cupid  
and Psyche (group). 400  
284 Porcinai, Antonio, Florence.  
a Surprised (bust). 400  
b Venus of Canova (statue). 400  
285 Torelli, Lot, Florence.—David, by  
Michael Angelo (copy). 400  
286 Garofoli, Oreste, Rome.  
a Trasteverina (Roman costume). 400  
b After the Theatre. 400  
c Ciociara (Roman costume). 400  
d Genzanese. 400  
287 Ricci, Paolo, Florence.—Dante  
(statuette). 400

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# EGYPT.

(South of South Avenue, Columns 12 to 15.)

## COLLECTIVE EXHIBIT.

### Minerals, Manufactures.

#### Minerals, Ores, Building Stones, Mining Products.

- 1 National Museum.
  - a Rough gold-dust, petrified wood. 100
  - b Rough, hewn, and polished marbles, alabaster, and limestones. 102
  - c Crude lime rock, cement, burned lime, and plaster. 103
  - d Clays and materials for manufacturing porcelain and faience. 104
  - e Sand. 106
  - f Soil and water. 107

#### Metallurgical Products.

- 2 National Museum.
  - a Solid rough gold pieces. 110
  - b Iron. 111

#### Chemical Manufactures.

- 3 Laboratory of the Government.
  - a Chemicals of all kinds and pharmaceutical preparations. 200
  - b Prepared oils, solid and liquid. 201
  - c Flavoring extracts, solid and liquid. 203

#### Ceramics—Pottery, Porcelain, etc.

- 4 National Museum.
  - a Bricks from Lower Egypt. 206
  - b Porcelain: tiles. 208
  - c Egyptian earthenware, from Upper Egypt. 210
- 5 Brugsch Bey, Cairo.
  - a Majolica ware in different designs. 211
  - b Porcelain of all kinds. 213

#### Furniture, and Objects of General Use in Construction and in Dwellings.

- 6 Parvis, Mr., Cairo.—Oriental drawing-room furniture. 217
- 7 National Museum.
  - a Table furniture of porcelain, solid gold and silver ware, coffee sets, and vessels of brass. 218
  - b Utensils for kitchen, and tinware. 224

#### Yarns and Woven Goods of Vegetable or Mineral Materials.

- 8 National Museum.
  - a Coarse fabrics of rattan, bark, palm-leaf, grass, and rushes. 220
  - b Cotton fabrics, unbleached, bleached, and dyed. 231

- c Linen fabrics, uncolored and dyed, and linen canvas and duck for awnings and tents. 232

#### Woven and Felted Goods of Wool and Mixtures of Wool.

- 9 National Museum.
  - a Fabrics of wool, fancy cassimeres. 233
  - b Flannels. 234
  - c Robes. 235
- 10 National Museum.—Collection of Brussels carpet, Melton, and tapestry from wool and camel's hair. 236

#### Silk and Silk Fabrics, and Mixtures in which Silk is the predominating material.

- 11 Tramontine, Mr., Cairo.—Cocoons and raw silk. 240
- 12 National Museum.
  - a Twisted silk in spools and skeins. 241
  - b Woven silk, lute-strings, satins, and foulards. 242
  - c Woven figured silk goods. 243
  - d Fancy silk and velvet ribbons. 245

#### Clothing, Jewelry and Ornaments; Traveling Equipments.

- 13 National Museum.
  - a Dress goods for men's and women's wear, with gold and silver trimmings. 250
  - b Hats, and boots; women's shoes embroidered in velvet, silk, gold, and silver. 251
  - c Silk dress trimmings and embroideries, woven with gold and silver. 252
  - d Turquoises, jewelry, and ornaments worn upon the person. 253
  - e Fancy articles, dress adornments, fans, walking-canes, sunshades, and pipes of all descriptions, with gold, silver, and silk woven ornaments, ostrich and marabout feathers. 254
  - f Fancy leather work. 255
  - g Historical collection of the national costumes from Abyssinia and the Soudan. 257

#### Paper, Blank Books, and Stationery.

- 14 National Museum.
  - a Stationers' articles of the Orient. 258
  - b Writing paper. 259

#### Military and Naval Armaments, Ordnance, Firearms, and Hunting Apparatus.

- 15 National Museum.—Swords, spears, and dirks. 260

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-46.



## Manufactures, Education and Science, Art, Agriculture.

- 16 Cassegrain, F. P., of Cairo.—Hunting firearms of a special pattern. 269

## Medicine, Surgery, and Prosthesis.

- 17 National Museum.—Medicinal plants. 272  
18 National Museum of Egypt, Mr. Zucchinietti, of Cairo.—Veterinary instruments. 276

## Hardware, Edge Tools, Cutlery, and Metallic Products.

- 19 Mechanic Institute of Boulak.—Iron hardware for different mechanical purposes. 284

## Carriages, Vehicles, and Accessories.

- 20 National Museum of Egypt, Mr. Zucchinietti, of Cairo.—Furniture for horses and mules, harness and saddlery, ornamental mule blankets, and silk woven saddle blankets. 296

## Educational Systems, Methods, and Libraries.

- 31 Ministry of Public Instruction.—Maps, charts, penmanship, drawings of pupils' work and course of study in water colors, from the public schools and academies. 300  
32 National Museum.  
a Map of Egypt and the new annexed provinces made by Mr. Friederichsen. 300  
b Mechanical instruments executed by scholars at the Polytechnic school. 302  
c Text-books and apparatus. 306  
33 Onay, Mr., of Cairo.—Types and books for the education of the blind. 303  
34 Ministry of Public Instruction.  
a College and school statistics and educational reports of Egypt. 304  
b Statistical reports. 305  
35 Mourès & Co., Cairo, Ministry of Public Instruction.—Printed works, school and text books, and dictionary, from the public schools of Egypt: literature in the Arabic language, newspapers, and periodical literature. 306

## Institutions and Organizations.

- 36 National Museum.—Ethnographical collection and publications. 312

## Scientific and Philosophical Instruments and Methods.

- 37 National Museum.  
a Egyptian weights and measures. 322  
b Musical instruments from Egypt and the provinces of Soudan. 327

## Engineering, Architecture, Charts, Maps, and Graphic Representations.

- 38 National Museum.—Maps of railways, roads, telegraphs, and postal service; topographical maps and charts. 335

## Physical, Social, and Moral Condition of Man.

- 39 National Museum.—Collection of Egyptian gold, silver, and copper coins. 344

## Sculpture.

- 30 National Museum.—Plaster casts from Egyptian monuments. 402  
31 National Museum.  
a Stones with ancient Arabic inscriptions. 403  
b Hammered relief works in copper, and collection of plates, trays, and vases of the modern time of Egypt. 403  
32 Vegis, Mr., Cairo.—Repoussé and raised work in copper and iron of the ancient Arabic time. 403  
33 National Museum.—Specimens of "Mousharabie" window patterns in wood and ivory, engraved wood. 405

## Painting.

- 34 National Museum.  
a View of Cairo and other water-color paintings, executed by Mr. Weidenbach, Berlin. 411  
b Painted water-bottles. 413

## Engraving and Lithography.

- 35 Ravon, H., Staff-officer National Museum.—Drawing in ink of the citadel of Cairo, list of the names of the caliphs and sultans who have reigned in Egypt, from Omar to Ismail Pacha, Khedive of Egypt, list of the names of Pharaohs. 420  
35a Penasson, A., Alexandria.—Samples of lithographic printing. 423

## Photography.

- 36 National Museum.—Collection of photographs, views of public works, costumes, scenery, panorama, and a collection of albums. 430

## Industrial and Architectural Designs, Models, and Decorations.

- 37 National Museum.—Collection of Arabic ornaments (plaster and zinc casts, painted and gilt), from time of the caliphs, made by Schmo-ranz. 443

## Decorations with Ceramic and Vitreous Materials, Mosaic and Inlaid Work.

- 38 National Museum.  
a Ancient glass lamps from the mosques. 451  
b Woodwork inlaid with ivory; ancient door from the sanctuary of a mosque, carved and inlaid in ivory and ebony. 452

## Arboriculture and Forest Products.

- 39 National Museum.  
a Collection of woods from Egypt and the annexed provinces, cotton tree. 600  
b Materials for dyeing and other industrial purposes. 602  
40 National Museum & Mr. Heller.—Samples of gums. 603

## Agricultural Products.

- 41 National Museum.  
a Cereals. 620  
b Legumes—beans, lentils, etc. 621  
c Tuberculous alimentaries. 622  
d Tobacco. 623  
e Cotton seeds. 624

## Animal and Vegetable Products, Textile Substances.

## Water Animals, Fish Culture and Apparatus.

## 42 National Museum.

- a Crocodiles. 640
- b Pearls. 645

## Animal and Vegetable Products.

## 43 National Museum.

- a Samples of butter. 651
- b Samples of grease, colored hides, skins, collection of hippopotamus and rhinoceros horns, tusks of elephants and hippopotami. 652
- c Ostrich eggs and feathers. 653
- d Edible pulps, seeds, fruits, pastes, and confections, dried fruits and vegetables. 656

- e Flour and rice. 65
- f Starches. 65
- g Sacchariculture. 65
- h Wines, alcohol, rum, and vinegar. 65
- i Biscuits. 65

## Textile Substances of Vegetable or Animal Origin.

- 44 Estate of the Khedive.—Collection of over 2000 cotton samples, representing the crops of eight years, with classification and price of sale in Egypt and England. 66
- 45 National Museum.—Textile fibres raw and manufactured, cords and ropes flax. 66

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## TUNIS.

(South of South Avenue, Columns 10 to 14.)

## COLLECTIVE EXHIBIT.

## Manufactures, Education and Science, Art.

**Minerals, Ores, Stones, Mining Products.**

- 1 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Minerals and ores of Tunis. 100

**Chemical Manufactures.**

- 2 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Essences and flavoring extracts. 203

**Ceramics—Pottery, Porcelain, Glass, etc.**

- 3 Valensi, M., Tunis and Paris.—Pottery. 206  
 3a His Highness Sidi Mohammed Essadok, Bey of Tunis.  
 a Pottery. 206  
 b Earthenware. 210

**Furniture and Objects of General Use in Construction and in Dwellings.**

- 4 Valensi, M., Tunis and Paris.  
 a Inlaid furniture. 217  
 b Brackets. 220  
 5 His Highness Sidi Mohammed Essadok, Bey of Tunis.  
 a Inlaid and household furniture. 217  
 b Gilt brackets. 220

**Woven and Felted Goods of Wool and Mixtures of Wool.**

- 6 His Highness Sidi Mohammed Essadok, Bey of Tunis.  
 a Woolen blankets, shawls. 237  
 b Carpets, rugs. 239  
 7 Valensi, M., Tunis and Paris.  
 a Shawls. 237  
 b Carpets and rugs. 239

**Silk and Silk Fabrics, and Mixtures in which Silk is the predominating material.**

- 8 His Highness Sidi Mohammed Essadok, Bey of Tunis.  
 a Woven silks. 245  
 b Hangings. 246

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 9 Valensi, M., Tunis and Paris.  
 a Woven silks. 245  
 b Hangings. 246

**Clothing, Jewelry, and Ornaments; Traveling Equipments.**

- 10 His Highness Sidi Mohammed Essadok, Bey of Tunis.  
 a Burnous. 250  
 b Embroideries. 252  
 c Jewelry. 253  
 d National costumes. 257  
 11 Valensi, M., Tunis and Paris.  
 a Jewelry. 253  
 b Oriental manufactures generally. 254  
 c Tunisian costumes. 257

**Military and Naval Armaments, Ordnance, Firearms, and Hunting Apparatus.**

- 12 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Ancient and modern arms. 265  
 13 Valensi, M., Tunis and Paris.—Arms. 265

**Carriages, Vehicles, and Accessories.**

- 14 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Saddlery; furniture and accoutrements for horses, mules, and camels; ornamental horse and mule saddles and bridles. 296

**Scientific and Philosophical Instruments and Methods.**

- 15 Valensi, M., Tunis and Paris.—Musical instruments. 327

**Ceramic Decorations, Mosaics, etc.**

- 16 Ancient mosaics from Carthage. 450

**Physical, Social, and Moral Condition of Man.**

- 17 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Two Arab tents, exhibiting the domestic life and customs of Arab sheiks and Bedouins; farming implements of Arabs. (*In Park.*) 342

# ORANGE FREE STATE.

(South of South Avenue, Columns 2 to 5.)

## COLLECTIVE GOVERNMENT EXHIBIT.

### Minerals, Clothing, Animal and Vegetable Products.

<i>a</i> Diamonds in the rough, from the diamond fields of the Orange Free State.	100	<i>g</i> Cream of tartar fruit.	621
<i>b</i> Diamondiferous soil, with a diamond in it.	100	<i>h</i> Wheat, mealies, and Kaffir corn.	620
<i>c</i> Copper and iron ore, chloresastrolite, and magnesita.	100	<i>i</i> Stuffed birds.	635
<i>d</i> Coal.	101	<i>j</i> Butterflies and other insects.	638
<i>e</i> Pebbles accompanying the diamond.	102	<i>k</i> Tusks of ivory.	652
<i>f</i> Kaolin.	104	<i>l</i> Gemsbuck, roorbuck, rietbuck, and hartebeeste horns.	652
<i>g</i> Springbuck mats.	239	<i>m</i> Koodoo cow hides.	652
<i>h</i> Angora, blesbuck, and jackal karosses.	239	<i>n</i> Blesbuck skins.	652
<i>i</i> Boots of native manufacture.	251	<i>o</i> Hartebeeste and blesbuck skins, tanned.	652
<i>j</i> Pipes of native manufacture.	254	<i>p</i> Shambucks, long and short.	652
<i>k</i> Baskets of native manufacture.	289	<i>q</i> Rhinoceros hide flexible rods, reins, thongs, and girdles.	652
<i>l</i> Harnesses and whips.	296	<i>r</i> Whips of giraffe hide.	652
<i>m</i> Figures in wood, cut with a pen-knife.	405	<i>s</i> Ostrich feathers and eggs.	653
<i>n</i> Blue gum, olive, and thorn woods.	600	<i>t</i> Bird plumage, natural.	653
<i>o</i> Petrified wood.	600	<i>u</i> Dried fruit.	656
<i>p</i> Sumach.	602	<i>v</i> Mealie meal.	657
		<i>w</i> Wool, washed and unwashed.	667
		<i>x</i> Mohair of Angora goat.	669
		<i>y</i> Model of transport wagon.	682

# GRAND DUCHY OF LUXEMBURG.

## COLLECTIVE EXHIBIT.

### Ceramics, Clothing, Animal and Vegetable Products.

#### Ceramics—Pottery, Porcelain, Glass, etc.

- 1 Utschneider & Jaunes, Wasserbillig.—Cement products of Wasserbillig. 206

#### Clothing, Jewelry, and Ornaments; Travelling Equipments.

- 2 Charles, Auguste, & Co., Bonnevoile, near Luxembourg.—Kid gloves. 251  
3 Mayer, Gabriel, Luxembourg.—Kid gloves. 251

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

#### 4 Boot Manufactory of Luxembourg.—Boots and shoes. 251

#### Animal and Vegetable Products.

- 4a Charles, Auguste, & Co., Bonnevoile, near Luxembourg.—Tanned and dyed kid skins. 652  
5 Michaelis, Frederic, Luxembourg.—Concentrated vinegar. 660  
6 Pauly, Bouthon, & Co., Distillery Vinegar Manufactory.—Concentrated vinegar. 660  
7 Eichhorn, Gustav, Wormeldang.—Moselle wines. 662

## CHINA.

(South of South Avenue, Columns 5 to 11.)

## COLLECTIVE EXHIBIT.

## Minerals, Manufactures.

- |   |  |   |
|---|--|---|
| <b>Minerals, Ores, Stone, Mining Products.</b>  |  | 16 Moore, C. F., Kiukiang.—Porcelain teapots, bottles, flower-pots, ornaments, etc. 213                   |
| 1 Harman, G., Swatow.—Petrification. 100  |  | 17 Rose, S. C., Kiukiang.—Porcelain vases, flower-pots, jars, plates, dishes, cups, dinner sets, etc. 213 |
| 2 Imperial Maritime Customs.  |  | 18 Tong Chock-hing, Kiukiang.—Porcelain vases, ornaments, dessert service, etc. 213                       |
| a Coal. 101   |  | 19 Toin Peh Mei, Kiukiang.—Porcelain vases, teacups, fruit stands, dinner sets, and screen. 213           |
| b Granite stones. 102   |  | 20 Wadman, E., Ningpo.—Collection of old china vases. 213   |
| c Marble. 104   |  |   |
| d Gypsum. 107   |  |   |
| <b>Metallurgical Products.</b>  |  | <b>Furniture and Objects of General Use in Construction and in Dwellings.</b>                             |
| 3 Imperial Maritime Customs.  |  | 21 Fow Loong, Canton.—Blackwood furniture—tables, sofas, chairs, screens, cabinets, etc. 217              |
| a Silver leaf and imitation of gold leaf. 110   |  | 22 Imperial Maritime Customs, Canton.   |
| b Steel. 111  |  | a Blackwood, bamboo, rattan, and lacquered furniture. 217   |
| c Tin foil. 113   |  | b Rattan cradle, and children's chairs. 221   |
|   |  | c Different kinds of lanterns. 223  |
| <b>Chemical Manufactures.</b>   |  | 23 Kopsch, H., Kiukiang.—Screens. 217   |
| 4 Imperial Maritime Customs.  |  | 24 Lien Shing, Canton.—Lacquered furniture, chairs, and blackwood screens. 217                            |
| a Various seed, vegetable, and wood oils. 201   |  | 25 Sung Sing Kung, Ningpo.  |
| b Varnish, indigo, and sundry other dyes and colors. 202  |  | a Carved furniture—beds, chairs, tables, bookcases, cabinets, etc. 217                                    |
| c Sauce. 203  |  | b Carved picture and photograph frames. 220   |
| <b>Ceramics—Pottery, Porcelain, Glass, etc.</b>   |  | 26 Imperial Maritime Customs, Ningpo.   |
| 5 Imperial Maritime Customs.  |  | a Teakettles and dishes. 224  |
| a Bricks. 206   |  | b Washbasins. 226   |
| b Roof tiles. 208   |  |   |
| c Collection of earthenware. 210  |  | <b>Yarns and Woven Goods of Vegetable or Mineral Materials.</b>   |
| 6 Tack Loong, Canton.   |  | 27 Fergusson & Co., Chefoo.—Samples of straw braid 229  |
| a Earthenware ornaments, figures, etc. 210  |  | 28 Imperial Maritime Customs.   |
| b Porcelain vases, flower-pots, tea set, cigar holders, etc. 213  |  | a Samples of grass cloth, rattan and coir matting, etc. 229   |
| 7 Bean & Jardine, Kiukiang.—Porcelain vases, flower-pots, cups, etc. 213  |  | b Plain cotton fabrics. 230   |
| 8 Fow Loong, Canton.—Porcelain vases, dinner service, etc. 213  |  | c Printed cotton fabrics. 232   |
| 9 Ho Kan Cheu, Shanghai.—Collection of old china. 213   |  | d Hemp cloth. 233   |
| 10 Ha Kwang, Yung Hang Chow.—Collection of old china porcelain. 213   |  | <b>Woven and Felted Goods of Wool, etc.</b>   |
| 11 Imperial Maritime Customs, Canton.—Porcelain vases, dinner, dessert, tea, and toilet sets, flower-pots, candle-holders, bowls, cuspidors, etc. 213 |  | 29 Imperial Maritime Customs.—Felt rugs. 239  |
| 12 Imperial Maritime Customs, Kiukiang.—Porcelain vases, cups, and bowls; plates, teapots, etc. 213   |  |   |
| 13 Imperial Maritime Customs, Shanghai.—Collection of old china. 213  |  | <b>Silk and Silk Fabrics.</b>   |
| 14 Kopsch, H., Kiukiang.—Porcelain vases, cups, bottles, cups and plates, dessert dishes, goblets, etc. 213   |  | 30 Fergusson & Co., Chefoo.   |
| 15 Lovatt, W. N., Kiukiang.—Porcelain vases, flower-pots, garden seats, teacups, dessert dishes, goblets, etc. 213                                    |  | a Raw silk. 242   |
|   |  | b Plain woven silks. 245  |

For names of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Manufactures, Education and Science, Art, Agriculture.

- 31 Imperial Maritime Customs, Shanghai.—Collection of reeled and re-reeled silks. 242
- 32 H8 Kan-cheu, Shanghai.—Plain woven silks. 245
- 33 Hu Kwang-Yung, Hangchow.—Plain woven silks. 245
- 34 Imperial Maritime Customs.  
 a Plain woven silks. 245  
 b Figured silk piece goods. 246  
 c Embroidered silk scarfs. 247
- 35 Fergusson & Co., Chefoo.—Figured silk piece goods. 246
- 36 H8 Kan-cheu, Shanghai.—Figured silk piece goods. 246
- 37 Hu Kwang-Yung, Hangchow.—Figured silk piece goods. 246
- 38 Wu, Shanghai.—Soochow gauzes. 247

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 39 Imperial Maritime Customs.  
 a Stockings. 250  
 b Shoes, hats, caps, etc. 251  
 c Fans, small articles of dress, pipes, smoking apparatus, etc. 254
- 40 Imperial Maritime Customs, Canton.—Collection of silk embroidered goods, shawls, slippers, and caps, bed and cushion covers, cloth, etc. 252
- 41 Sisters of Charity, Ningpo.—Embroideries. 252
- 42 Sung Sing Kung, Ningpo.—Satin embroideries. 252
- 43 Lien Shing, Canton.  
 a Jewelry. 253  
 b Fans and hand screens. 254
- 44 Moore, C. F., Kiukiang.—Jewelry and ornaments. 253
- 45 Ho A Ching, Canton.—Carved fans. 254
- 46 Imperial Maritime Customs, Niuchwang.—Collection of furs and skins. 255
- 47 Imperial Maritime Customs, Shanghai.—Fancy leather work, trunks, and toilet boxes. 255

## Paper, Blank Books, and Stationery.

- 48 Imperial Maritime Customs.  
 a Paper, knives, ink, pens, etc. 258  
 b Writing paper. 259  
 c Oiled and pith paper. 260  
 d Various colored paper. 264
- 49 Tong Chou Hing, Kiukiang.—Ink. 259

## Medicine, Surgery, Prosthesis.

- 50 Imperial Maritime Customs.—Collection of medicines, official and unofficial. 272

## Hardware, Edge Tools, Cutlery, Metallic Products.

- 51 Ho Kan Cheu, Shanghai.—Collection of old bronzes, vases, urns, etc. 283
- 52 Hu Kwang-Yung, Hangchow.—Collection of old bronzes, vases, urns, etc. 283
- 53 Imperial Maritime Customs.—Pewter ware, tea canisters, cups, pots, mugs, boxes, candlesticks, etc. 283

- 54 Imperial Maritime Customs, Shanghai.—Collection of old bronzes, vases, urns, etc. 284

- 55 Wadman, E., Ningpo.—Collection of old bronzes, vases, urns, etc. 284

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 56 Imperial Maritime Customs.  
 a Cord, rope, twine, etc. 287  
 b Lacquer, rattan, and bamboo ware. 289
- 57 Ho A Ching, Canton.—Lacquer ware. 289
- 58 Lien Shing, Canton.—Lacquer and sandalwood ware. 289

## Scientific and Philosophical Instruments and Methods.

- 59 Imperial Maritime Customs.—Collection of musical instruments. 327

## Physical, Social, and Moral Condition of Man.

- 60 The Protestant Missionaries in China.—Publications. 348

## Sculpture.

- 61 Grimm, B., Shanghai.—Collection of coins and medals. 401
- 62 Ho A Ching, Canton.—Carved ivory ware. 405
- 63 Imperial Maritime Customs, Canton.—Carved ivory and tortoise shell ware. 405
- 64 Lien Shing, Canton.—Carved ivory ware, etc. 405
- 65 Moore, C. F., Kiukiang.—Carved figure. 405

## Paintings.

- 66 Hipplesley, A. E., Shanghai.—Water-color paintings on silk, for screens, painted by Wang Kieu-ting. 411
- 67 Imperial Maritime Customs.—Collection of ancient water-color paintings on silk and paper; pictures on pith paper. 411

## Ceramic Decorations, Mosaics, etc.

- 68 Vo Chon, Canton.  
 a Two cloisonné brass incense burners. 458  
 b Bronze vases, incense burners, plates, etc. 454
- 69 Moore, C. F., Kiukiang.—Enamel vase and bowl, idols, jade plate. 454

## Arboriculture and Forest Products.

- 71 Imperial Maritime Customs.  
 a Specimens of timber. 600  
 b Gallnuts and dyestuff. 602  
 c Camphor. 603  
 d Moss and fungus. 604  
 e Collection of nuts and seeds. 605
- 72 Fergusson & Co., Chefoo.—Red dyestuff. 602

## Agricultural Products.

- 73 Fergusson & Co., Chefoo.  
 a Peas and beans. 620  
 b Tobacco. 623

## Agricultural, Animal, Vegetable Products.

## 74 Imperial Maritime Customs.

a Cereals.	620
b Leguminous plants.	621
c Ginger.	622
d Tobacco and opium.	623
e Seeds.	624

## 75 Imperial Maritime Customs, Shanghai.—Collection of teas.

623

## Water Animals, Fish Culture and Apparatus.

## 76 Imperial Maritime Customs.

a Dried fish.	642
b Clams, dried.	644
c Fish glue and sea blubber.	646
d Instruments and apparatus of fishing.	647

## 77 Imperial Maritime Customs, Tamsui.—Collection of sea shells.

645

## Animal and Vegetable Products.

## 78 Imperial Maritime Customs.

a Seaweed.	650
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## b Leather, furs, skins, tallow, glue, etc.

652

## c Honey and wax.

654

## d Dried fruit.

656

## e Flour.

657

## f Vermicelli, macaroni, starch, etc.

658

## g Sugar, etc.

659

## h Wines, etc.

660

## i Vegetable tallow and oil.

662

## 79 Fergusson &amp; Co., Chefoo.

## a Bean cakes.

657

## b Vermicelli.

658

## Textile Substances of Vegetable or Animal Origin.

## 80 Imperial Maritime Customs.

## a Cotton.

665

## b Hemp, coir, etc.

666

## c Wool.

667

## d Hair.

669

## 81 Fergusson &amp; Co., Chefoo.—Sample of hemp.

666

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

## JAPAN.

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## COLLECTIVE EXHIBIT.

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   d Chairs and tables, etc., for schoolrooms.  
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 h Educational equipments, tables, pens, ink boxes, blank books, paper, and other stationery.  
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 k Examination paper for students.  
 l Designs and photographs for schools.  
 m Sectional specimens of woods.  
 n Leaves of various plants.  
 o Books of botany.  
 p Tabular statements of botanical classification.  
 q Moku-zai-sho-ran (album showing samples of the various woods used for industrial purposes).  
 r Artificial fruits.  
 s Ancient and modern medical and surgical books, and modern surgical instruments made by K. Iwashiya.  
 t Medicines and drugs.  
 u I-in zas-si, miscellaneous reports of the hospital pertaining to the medical academy.  
 v Anatomical designs.  
 w Paintings and painting materials.  
 x Lacquer work, showing process of manufacture and implements used.  
 y Wood engravings and engraving-tools, blocks and types; printing materials.  
 z Photographs.  
 ab Outline of the history of education in Japan; history of the literature and short historical sketch of the educational department. (All accompanied by the English translation.)  
 ac Educational regulations, notifications, reports, miscellaneous information, and Riji-ko-tei (educational reports by F. Tanaka).  
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## Industrial and Architectural Designs, etc.

- 272 Zoroku, H., Kiyoto.—Bronze statuettes, tripod kettles. 443
- 273 Kumagai, K., Kiyoto.—Bronze vases. 443

## Ceramic Decorations, Mosaics, etc.

- 274 Nishimura, S. J., Mikuria, Province of Hoki.—Inlaid work in wood. 452
- 275 Yamamoto, Y., Shizuoka, Province of Suruga.—Inlaid work in wood. 452
- 276 Marunaka, M., Kanazawa, Province of Kaga.  
a Vases, inlaid boxes, etc. 452  
b Enameled silver goblets. 454
- 277 The Shippokuwasha, Province of Owari.—Tea caddy. 452
- 278 Kanaya Gorosaburo, Kiyoto.  
a Bronze vases and pots. 452  
b Water pot, goblets, and sweetmeat boxes. 454
- 279 Yomo Yasunosuke, Kiyoto.—Bronze plates. 452
- 280 Fukihara, S., Tokio.—Enameled plates and jar. 454
- 281 Ta-Ho-jo, Kiyoto.—Vase. 454
- 282 Namiwaka Yasu-u-ki, Kiyoto.—Vases, lunch boxes, cigar stands, etc. 454
- 283 Zoroku, H., Kiyoto.—Ornamental buckle in imitation of old bronze. 454
- 284 Kiriu-Kosho-Kuwasha, First Japanese Manufacturing & Trading Co., Tokio.—Enameled basin, imitation of Chinese ware; porcelain statuettes, bronze bowl. 454

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## HAWAII.

(South of South Avenue, Columns 10 to 14.)

## COLLECTIVE EXHIBIT.

## Minerals, Manufactures, Education.

## Minerals, Ores, Stone, Mining Products.

- 1 Gilman, J. H.—Lava specimens from Kilauea. 100  
 2 Hawaiian Museum.—Geological specimens, by W. L. Green. 100  
 3 Hitchcock, H. R.—Geological specimens from crater of Kilauea. 100  
 4 Boys' Boarding School.—Coal from the forests of Haleakala. 101

## Chemical Manufactures.

- 5 Pinkham, G. S.—Blackening. 202

## Furniture and Objects of General Use in Construction and in Dwellings.

- 6 Auld, William.—Cue. 217  
 7 Brown, G. W.—Table from a variety of woods. 217  
 8 Kamaipelekane, E. P.—Fac-simile of bed, etc., used by Kamehameha I. 217  
 9 Fischer & Co.  
 a Small and large tables, revolving book-rack. 217  
 b Picture frame. 220  
 10 Williams, C. E.—Revolving shell case. 217  
 11 Hopper, J. A.—Kou calabashes. 224  
 11a Emma, Queen.—Water gourds and figured calabashes. 224

## Yarns and Woven Goods of Vegetable or Mineral Materials.

- 12 Gilman, J. H.—Bamboo of silky fibre for decorations. 229  
 12a Emma, Queen.—Figured kapas and niuhau mats. 229

## Clothing, Jewelry, and Ornaments; Traveling Equipments.

- 12b Peterson, James A.—Yellow and black feather cape. 250  
 12c Kawaiahao Female Seminary.  
 a Crotchet work by pupils. 252  
 b Mimosa seed necklaces by pupils. 254  
 13 Emma, Queen.  
 a Cane flower and fern stem hats. 251

b Yellow and green feather wreaths, feather fly brushes, ever-lasting and moss wreaths, strings of Niuhau shells, and arrowroot plant fans. 254

- 14 Dickson, J. Bates.—Micronesian corals and corals. 254  
 15 Beckley, F. W.—Set of kapas. 254  
 16 Boyd, Miss E.—Spatter work of mottoes and island ferns. 254  
 16a Pratt, Mrs.—Feather fly brushes. 254  
 17 Kealoha.—Set of kapas. 254  
 18 Oahu College.—Land shells. 254  
 19 Rose, Katie.—Set of kapas. 254  
 20 Williams, C. E.—Canes. 254  
 21 Wilder, Helen.—Manahiki woman's hair. 254  
 22 Young, Mrs.—Wreath of mosses and shells. 254

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 23 Department of War.—Hawaiian flag, royal standard. 256

## Carriages, Vehicles, and Accessories.

- 24 Lyman, F. S.—Saddle and bridle. 256

## Educational Systems, Methods, and Libraries.

- 25 Department of Education.  
 a Photographs of school-houses and groups of Hawaiian teachers and pupils. 300  
 b Hawaiian school-books and legislative reports. 306  
 25a Brigham, W. T.—"Hawaiian Volcanoes" and various works on the Hawaiian Islands. 306  
 27 Damon, S. C.—"The Friend" and Bowditch's Navigator, in the Japanese language. 306  
 28 Whitney, H. M.—"Gazette" and "Kuokoa" for 1875. 306  
 29 Sheldon, H. L.—"Pacific Commercial Advertiser." 306  
 29a Thrum, T. G.—Volume of the "Islander." 306

## Institutions and Organizations.

- 30 Clarke, F. L.—Hawaiian curiosities: cocoanut shell water calabash, lei palava tobacco pipe, stone lamp, stone adze, sling stone. 312

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Education and Science, Art, Machinery, Agriculture.

30<sup>a</sup> Emma, Queen.—Ancient imple-  
ments of various kinds. 312

Engineering, Architecture, Charts,  
Maps, and Graphic Representations.

31 Honolulu Iron Works.—Drafts of  
machinery. 330

32 Alexander, W. D.—Map of the cra-  
ter of Haleakala. 335

32<sup>a</sup> Department of Government Sur-  
vey.—Map of the Hawaiian Islands. 335

32<sup>b</sup> Thrum, T. G.—Sets of Hawaiian  
postage stamps. 345

Physical, Social, and Moral Condition  
of Man.

33 Native of Hawaii.—Wooden  
idols. 348

## Painting.

34 Spencer, O. B.—Oil painting "Hilo  
Bay," by J. H. Nawahi. 410

35 Bailey, E.—Oil paintings. 410  
a Bird's eye view of the crater of Haleakala.  
b View of Hilo Village and Coconut Island.  
c Views in Hilo.  
d Scenery in Iao Valley.

## Photography.

36 Honolulu Iron Works.—Photo-  
graphs of works. 430

36<sup>a</sup> Brigham, W. T.—Photographs of  
ancient idols. 430

37 Thrum, T. G.—Photograph of Hono-  
lulu. 430

38 Dickson, M.—Photographs of island  
scenes. 430

## Ceramic Decorations, Mosaics, etc.

39 Department of Interior.—Hawaiian  
coat of arms painted on glass. 453

Machines and Implements of Spin-  
ning, Weaving, Felting, and Paper  
Making.

39<sup>a</sup> Kapa beaters and dies for print-  
ing. 504

## Arboriculture and Forest Products.

40 Boys' Boarding School.

a Woods from the forests of Haleakala. 600

b Silver swords, 1 ring ferns. 604

41 Andrews, C. B.—Mounted ferns. 604

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

42 Hitchcock, D. H. & E. G.—Speci-  
mens of the pulu ferns, silver swords. 604

43 Hitchcock, H. R.—Ferns and  
mosses. 604

44 Jones, G. W. C.—Large tree fern. 604

## Agricultural Products.

44<sup>a</sup> Wong Go.—Rice. 620

44<sup>b</sup> Chulan & Co.—Rice and paddy. 620

44<sup>c</sup> Waimanalo Plantation.—Rice. 620

45 Hackfeld, H., & Co.—Coffee from H.  
N. Greenwell. 623

## Land Animals. \*

46 Mills, J. D.—Hawaiian birds. 635

## Animal and Vegetable Products.

47 Krull, E.—Tallow. 652

48 Lyman, F. S.—Leather. 652

49 Eldarta, T. E.—Arrowroot and tapi-  
oca. 658

49<sup>a</sup> Dreier & Heine.—Manioc root. 658

50 Spencer, T., Hilo.—Cane sugars. 659

51 Hitchcock Bros., Hilo.—Cane au-  
gars. 659

52 Austin, S. L., Hilo.—Cane sugars. 659

53 Afong & Achuck, Hilo.—Cane au-  
gars. 659

54 Campbell & Turton, Lahaina.—Cane  
sugars. 659

55 Bailey, W. H., Wailuku.—Cane au-  
gars. 659

56 Makes, Capt. James, Ulupalakua.—  
Cane sugars. 659

57 Alexander, S. T., Haku.—Cane au-  
gars. 659

58 Waihee Plantation, Mani.—Cane  
sugars. 659

59 Lihue Plantation, Kauai.—Cane au-  
gars. 659

60 Kapena, J. M.—Samples of sugar  
cane. 659

61 McLean, G. C.—Castor, cocoanut,  
and kukui oils. 662

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Animal Origin.

62 Holstein, H.—Sea Island cotton. 665

63 Wilder, S. G.—Olona fibre. 666

64 Hyman Bros.—Ramie fibre. 666

65 Gilman, J. N.—Painiu fibre. 666

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## Chemicals, Ceramics, Furniture.

## Chemicals.

- 1 Lopez, F. J. de Almeida.—Salt-petre. 200
- 2 Muricy, J. C. da Silva.—Sulphur from quartz. 200
- 3 Leao, D. Agostinho, S. E.—Sulphuret of lead. 200
- 4 Lendenberg, L. B.—Salt. 200
- 5 Penna, A. G. d'Araujo.—Homoeopathic vegetable tinctures and opodeldoc. 200
- 6 Chemical Laboratory.—Chemical and pharmaceutical preparations. 200
- 7 Maia, Ferreira, & Co.—Pharmaceutical preparations. 200
- 8 Perdigao, D. F. Z.—Pharmaceutical products. 200
- 9 Province of Maranhao.—Pharmaceutical preparations. 200
- 10 Province of San Paulo.—Medical preparations. 200
- 11 Viotti, E.—Pharmaceutical preparations. 200
- 12 Province of Parã.—Medicinal oils. 200
- 13 Cardoso & Gonsalves.—Soap. 201
- 14 Alves, Pereira, & Co.—Soap and candles. 201
- 15 Guimaraes, A. J. A.—Soap and candles. 201
- 16 Oliveira & Bro.—Soaps. 201
- 17 Carvalho, Ferreira de, & Bro.—Soap and candles. 201
- 18 Stearic Light Co.—Soaps and candles. 201
- 19 Dias, Duarte.—Oils. 201
- 20 Province of Parã.—Soaps and candles. 201
- 21 Safarana, J.—Wax candles. 201
- 22 Stechel.—Oils. 201
- 23 Silva, S. S. G. da.—Copying and writing ink. 202
- 24 Monteiro & Co.—Writing inks. 202
- 25 Guimaraes, J. A. da Sa.—Pigments and varnishes. 202
- 26 Province of San Paulo.—Writing inks. 202
- 27 Yillela.—Writing inks. 202
- 28 Henninger, Dan., & Co.—Toilet soaps. 203
- 29 Lang & Co.—Toilet soaps. 203
- 30 Leao & Alves.—Perfumery. 203
- 31 Freire, Otto.—Essences. 203

- 32 Lepage, F. J.—Essences and pomades. 203
- 33 Commission-General for the National Exhibitions.—Flavoring extracts, essences, and perfumery. 203
- 34 Lang, J.—Toilet soaps. 203
- 35 Province of Pernambuco.—Safety matches. 204

## Ceramics—Pottery, Porcelain, Glass, etc.

- 36 Esberard, F. A. M.—Terra-cotta vases and pottery. 206
- 37 Colony of D. Francisca.—Bricks and tubes. 206
- 38 Commission-General for the National Exhibitions.—Bricks. 206
- 39 Leao, D. A. E.—Brick of gres (clay). 206
- 40 Province of San Pedro do Sul.—Stone bricks. 206
- 41 Province of Parã.—Tiles and bricks. 206
- 42 Grillo, Amaro D.—Clay pots, cups, and vases. 207
- 43 Patury, J. J. S.—Clay pots. 207
- 44 Correa, J. S.—Slate tiles for pavements and roofing. 208
- 45 Muricy, J. C. da Silva.—Enameled tiles. 208

## Furniture and Objects of General Use in Construction and in Dwellings.

- 46 Commission-General for the National Exhibitions.
  - a Parlor furniture. 217
  - b Tortoise-shell boxes and articles of straw. 218
- 47 Province of Parã.—Furniture. 217
- 48 Army Arsenal of Porto-Alegre.—Secretary of cedar wood. 217
- 49 House of Correction of Bahia.—Furniture made by the inmates. 217
- 50 House of Correction of Rio de Janeiro.
  - a Secretary and cabinet suit of satinwood. 217
  - b Baskets, barrels, and stands for manioc flour. 224
- 51 Kern, Clara, & Lang, Tela.—Reclining chair. 217
- 52 Itabapoana, Baron of.—Reclining chair. 217
- 53 Gerth, R. J.—Willow furniture. 217
- 54 Kappel & Bro.—Wood works. 217

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



Furniture, Woven Goods, Clothing.

- 55 Aguir, J. C. da Costa.—Book-stand. 217  
 56 Supplyey, J. F.—Hanging shelves and cane-seated chairs. 217  
 57 Loesch, Zacharias.—Work-box. 217  
 58 Moreira, F. J., & Co.—Chairs. 217  
 59 Alipio, D. J.—Writing-desk of sole leather. 217  
 60 Rodriguez, A. A.—Writing-desk. 217  
 61 Province of San Paulo.—Suit of furniture made of straw. 217  
 62 Keppler & Bro. 217  
     a Wooden chairs. 217  
     b Mouldings. 217  
 63 Borddal, Jonas.—Tables and shelves. 217  
 64 Province of Sancta Catharina.—Furniture. 217  
 65 Rocha, Polybio da.—Multiform piece of furniture. 217  
 66 Martinelli & Bro.—Marble fixtures for wash-stands. 219  
 67 Pittanti, Adriano, & Co.—Marble wash-stand. 219  
 68 Pommereis, Leon.—Imitation marbles. 219  
 69 Baumgarten, J.—Box with looking-glass for examining eggs. 224  
 70 Macheer, A. J., Gama.—Straw satchels and sieves. 224

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- 72 Person, A.—Wire cloths. 228  
 73 Bardet, F.—Wire cloths and manufactures. 228  
 74 Commission-General for the National Exhibitions.  
     a Hammocks made of different coarse materials, and in different provinces. 229  
     b Cotton fabrics, quilts, and towels. 230  
     c Dyed cotton fabrics. 231  
 75 Arouca & Co.—Cotton fabrics. 230  
 76 Rebello & Co.—Cotton fabrics. 230  
 77 Brazil Industrial Cotton Mill Co.—Cotton fabrics. 230  
 78 Colony of Blumenau.—Cotton fabrics and quilts. 230  
 79 Mascarenhas & Bros.—Cotton goods. 230  
 80 Barroa, Diogo A. de.—Cotton goods. 230  
 81 Anhaia & Angelo.—Cotton goods. 230  
 82 Union Mercantile Co.—Cotton goods. 230  
 83 College of the Immaculate Conception.—Cotton hammocks. 230  
 84 Yicara, C. P. Sa.—Cotton hammocks. 230  
 85 Province of Paraná.—Twisted yarns. 230  
 86 Petropolitan Co.—Cotton goods. 230  
 87 Chaná, Barthelémy.—Dyed cotton goods. 230  
 88 Reyner, F.—Dyed cotton goods. 231  
 89 Lemes, R. Z. Paes.—Cotton articles. 232

- 90 Keller, Felipe.—Linen goods. 233  
 91 Colony of St. Maria da Soledade.—Linen goods. 233  
 92 Colony of Nova Petropolis.—Linen goods. 233  
 93 Kalden, Baron of.—Linen goods. 233  
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 94 Lopez, F. J., Almeida.—Ck. n. quilts, and cassimeres. 233  
 95 Moura, J. C. de.—Cassimeres. 235  
 96 Rheingantz & Vater.—Woolen goods. 235  
 97 Maschado, M. A.—Articles made of horschair. 240

Silk and Silk Fabrics.

- 98 Rayhaer, Fernando.—Silk goods. 245

Clothing, Jewelry, and Ornaments.

- 99 Dol, Ad., & Co.—Linen underwear. 250  
 100 Lopez, F. J. A.—Pantaloons and other cotton wear. 250  
 101 Roballo, J. J.—Coat of fine cloth. 250  
 102 Grava, Frei L. da.—Knitted shirt. 250  
 103 Amaral & Co.—Complete suit for gents. 250  
 104 Fayett & Battcher.—Pantaloons. 250  
 105 Commission-General for the National Exhibitions.  
     a Wooden and leather shoes and cipó hats. 251  
     b Walking-canes and articles of tortoise-shell and straw. 254  
     c Leather suit worn by herdsmen. 257  
 106 Chastel & Co.—Hats. 251  
 107 Armada, J. Alvaro de.—Hats, caps, and bonnets. 251  
 108 Bierrenback & Bros.—Hats and caps. 251  
 109 Braga, Fernandes, & Co.—Hats, caps, and bonnets. 251  
 110 Bithencourt, J.—Lasts for shoes. 251  
 111 Viguier.—Boots and shoes. 251  
 112 Silva, J. B. Carvalho da.—Hats. 251  
 113 Camará, J. E. P.—Hats. 251  
 114 City Council of Cameta.—Hats. 251  
 115 Santos, P. C. dos.—Hats. 251  
 116 Bossel, H.—Felt hats. 251  
 117 House of Correction, Riode Janeiro.—Boots and shoes. 251  
 118 Fischer, F.—Hats and caps. 251  
 119 Figueiredo & Co.—Boots and shoes worn by the army and navy. 251  
 120 Cathiard, C. F.—Boots and shoes. 251  
 121 Berthon.—Ladies' shoes. 251  
 122 District of Paulo Alfonso.—Leather hats. 251  
 123 Silva, H. J. da.—Canvas shoes. 251  
 124 Requiao, F. P.—Hats. 251  
 125 Gomes, M. M. Rodriguez.—Boots and shoes. 251

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- 126 Sertorio & Pinho.—Kid gloves. 251  
 127 Vigulier, H.—Shoes. 251  
 128 Moraes, J. C. de.—Silk hats. 251  
 129 Fluminense Institute of Agriculture.  
   a Hats made of the Bombonacea fibre. 251  
   b Cigar cases made of the same. 254  
 130 Valentin, M. J.—Jewelry. 252  
 131 Rease, jr., Victor, & Bros.—Decorations. 252  
 132 Natté, Miss.—Fancy objects made of feathers, as fans, coiffures, etc. 254  
 133 Province of Amazonas.—Wreath of feathers. 254  
 134 Lima, C. A. de, & Calarans, J. M. de.—Artificial flowers. 254  
 135 Braga, A. J. F.—Feather articles. 254  
 136 Cavalcanti, J. S. H.—Umbrella, with secret spring. 254  
 137 Henke Bros.—Walking-canes. 254  
 138 Leme, D. R. Paes.—Leather walking-canes. 254  
 139 Rocha, J. P. da.—Buttons, earrings, and watch chain made of cocoa. 254  
 140 Ferreira, L. Gomes.—Walking-canes. 254  
 141 Barros, A. A.—Walking-canes. 254  
 142 Bastos, José Xavier.—Carved walking-cane. 254  
 143 Costa, J. F. da.—Pictures made of mosses and insects. 254  
 144 Reis, H. F. dos.—Walking-cane. 254  
 145 Province of Rio Grande do Norte.—Jewelry boxes of wood and tortoise-shell. 254  
 146 Province of Maranhão.—Drinking-cups of wood. 254  
 147 Silva, F. J. X. da.—Chalices and cups of sassafras. 254  
 148 Sabut, George.—Objects made from pine-tree knots. 254

## Paper, Blank Books, Stationery.

- 149 Leusinger Sons.—Blank books and specimens of binding. 261  
 150 Seckler, J.—Specimens of ruling and binding. 261

## Medicine, Surgery, and Prothesis.

- 151 Garrid, J. F. da Silva.—Druggist's scales. 274  
 152 Merino & Co.—Surgical instruments. 276  
 153 Costa, jr, M. F. da.—Artificial teeth. 277  
 154 Faria, J. Bento da.—Artificial teeth. 277

- 155 Diniz, J. Borges.—Artificial teeth. 277

## Hardware, Edge Tools, Cutlery, etc.

- 156 Commission-General for the National Exhibitions.—Knives, daggers, and other implements. 281

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 157 Commission-General for the National Exhibitions.  
   a Brooms, brushes, etc. 286  
   b Cordage. 287  
 158 Almeida, A. R. de.—Cordage. 287  
 159 Andrade, J. Neves.—Baskets. 289  
 160 Mello, G. C. de.—Wooden urn. 289

## Carriages, Vehicles, Harness, and Accessories.

- 161 Commission-General for the National Exhibitions.—Harness and saddle. 296  
 162 Guimarães, A. A. A.—Lady's saddle. 296  
 163 Maylasky, S.—Serigotis (a leather girth). 296  
 164 Lima, F. Gomes dos Santos.—Girths. 296  
 165 Cahy, Baron of.—Leather reins and bridles. 296  
 166 Crazz, Joao, & Pinto.—Harness and horse collar. 296  
 167 Schmitt, Nicolau, & Co.—Complete set of harness. 296  
 168 Guimarães, T. T. A.—Saddles. 296  
 169 Coullant, Aimé.—Horse collars. 296  
 170 House of Correction of São Paulo.—Bridles, reins, and harness. 296  
 171 Almeida, A. L.—Leather reins. 296  
 172 Moraes, T. C.—Saddle. 296  
 173 Barros, J. de A.—Leather reins. 296  
 174 Bierrengard, Waldemar.—Harness. 296  
 175 Leao, A. E. de.—Whip. 296  
 176 Barros, A. A., & Gaveao, B. A.—Whips. 296  
 177 Freischlag, Frederico.—Harness. 296

## Animal and Vegetable Products.

- 178 Klippel & Bro.—Hides and furs. 652  
 179 Freischlag, F.—Patent leather. 652  
 180 Costa, Eymael, & Co.—Tanned hides. 652  
 181 Lima, F. G. S.—Tanned and sole leather. 652  
 182 Richia, Jacob.—Tanned and sole leather. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## ARGENTINE REPUBLIC.

(South of Nave, Columns 2 to 5.)

## Chemical Manufactures.

## Chemical Manufactures.

- 1 Serravalle, Carlos, Province of Corrientes.—Chemical and pharmaceutical preparations. 200
- 1a Cabrera, Mauro, Province of Buenos Ayres.—Horse medicine. 200
- 1b Cardalda, Inocencio, Province of Buenos Ayres.
  - a Iodoform and pepsin. 200
  - b Glycerine. 201
- 2 Queirel, Joaquin, Province of Corrientes.—Depurative solution. 200
- 3 Tava, Carlos, Province of Corrientes.—Bitters, digestive pepsin wine, pectoral syrup. 200
- 4 Sub-Commission of Bella Vista, Province of Corrientes.—Salt extracted from clay; sample of clay. 200
- 5 Perez, A. G., Province of La Rioja.—Toxic. 200
- 6 Gelos, Martin, Province of La Rioja.—Mineral salt. 200
- 7 Provincial Commission, Province of La Rioja.—Salt and alum. 200
- 7a Lagos, Joseph M., Province of Buenos Ayres.—Sheep wash. 200
- 7b Torres, Ana Barton de, Province of Buenos Ayres.—Fumigating lozenges. 200
- 8 Provincial Commission, Province of Santiago del Estero.—Ashes for soap manufacturing. 200
- 9 Provincial Commission, Province of Salta.
  - a Salt. 200
  - b Soap. 201
- 10 Justice of the Peace of Bahia Blanca, Province of Buenos Ayres.—Salt. 200
- 11 Justice of the Peace of Patagones, Province of Buenos Ayres.—Salt. 200
- 11a Rosquellas, Julian, Province of Santa Fé.—Medicines for animals. 200
- 12 Murga, N., Patagones, Province of Buenos Ayres.—Coarse salt. 200
- 12a Mujica, Eleuterio, S., Province of Buenos Ayres.
  - a Artificial guano from dried and boiled blood. 200
  - b Soluble blood albumen for producing fast colors. 202
- 12b Fabiet, Beltran.—Preserved and soluble blood. 200
- 13 Provincial Commission, Province of Tucuman.
  - a Sea salt. 200
  - b Soap. 201
- 14 Commission of Andalgala, Province of Catamarca.—Rock salt from Laguna Blanca. 200
- 15 Provincial Commission, Province of Catamarca.
  - a Rock salt from Fiambalá, and saltpetre. 200
  - b Soap. 201
- 16 Lafone-Quevedo, Samuel A., Province of Catamarca.
  - a Ashes of Cachi Yuyo for the production of carbonate of soda; carbonate of soda. 200
  - b Soap. 201
- 17 Provincial Commission, Province of Jujul.—Salt. 200
- 18 Escobar, Juan D., Province of San Luis.—Salt. 200
- 19 Terramola, Delfin, Province of San Juan.—Salt from the mines of Leoncito. 200
- 20 Jones, Fabian, Province of San Juan.—Ashes for manufacturing soap. 200
- 21 Vidal, M. A., Province of San Juan.—Ashes for manufacturing soap. 200
- 22 Bruna, Estevan, Province of San Juan.—Ashes for manufacturing soap. 200
- 23 Puertas, Lorenzo, Province of San Luis.—Cholera medicine. 200
- 24 Escrib, Pedro, Province of Buenos Ayres.—Peanut oil. 201
- 25 Pifreiro, Aurelio, Province of Buenos Ayres.—Soap. 201
- 27 Lanteri, Miguel, Province of Entre-Rios.—Soap. 201
- 28 Iglesias, José, Province of Entre-Rios.—Soap. 201
- 32 Provincial Commission, Province of Córdoba.—Balsamic oil. 201
- 33 Carmen, T. Davila, Province of La Rioja.—Olive oil. 201
- 34 Alric, Antonio, Province of San Luis.—Soap. 201
- 34a Bergaré, Dr, Province of Santa Fé.—Peanut oil. 200
- 35 Billar, Salvador, Province of Jujul.—Petroleum. 201
- 36 Julien & Son, Province of Buenos Ayres.—Dyed stuff fabrics. 202
- 37 Prat, Adrian, Province of Buenos Ayres.—Dyed wool. 202
- 38 Doucet, Emilio, Province of Buenos Ayres.—Writing fluids. 202
- 39a Muro, Antonio, Province of Buenos Ayres.—Inks. 202
- 40 Herrera, Melchora, Province of Catamarca.—Cochineal. 202

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Ceramics, Furniture, Woven Goods.

- 42 Nolte, Ernesto, Province of Buenos Ayres.—Tooth powder. 203  
 42a Corneja, Melchora T. de, Province of Salta.—Zarza water. 203

## Ceramics—Pottery, Porcelain, Glass, etc.

- 43 Pedruncini, Juan, Province of Buenos Ayres.—Burnt bricks. 206  
 44 Valdes, Emiliano, & Cipriano, Province of Buenos Ayres.—Burnt brick from Balcarce; brick made of black clay. 206  
 45 Fauvety & De Ville Massot, Province of Buenos Ayres.—Bricks. 206  
 46 Sub-Commission of the Department of Victoria, Province of Entre-Ríos.—Architectural pottery. 206  
 47 Tudicar, H., & Co., Province of Entre-Ríos.—Bricks made in Gualeguaychú. 206  
 48 Commission of the Department of Paraná, Province of Entre-Ríos.—Tiles and bricks made in Victoria. 206  
 49 Provincial Commission, Province of Córdoba.  
   a Tiles of burnt clay, of San Vincente Factory. 206  
   b Flower pots, jars, stew pans, and dishes. 207  
   c Cup, jug, etc. 213  
 50 Grunes & Co., Chaco-Argentine Territory.—Bricks. 206  
 51 Cervera & Co., Province of Santa Fé.—Tiles and bricks. 206  
 51a Provincial Commission, Province of Tucuman.—Bricks and tiles. 206  
 52 Echevarria, Cecilio, Province of Santa Fé.—Pitchers made by Indians. 210  
 54 Provincial Commission, Province of Salta.—Pans and plates. 213  
 55 Provincial Commission, Province of San Luis.—Crockery. 213  
 56 Alegre, Juan, Province of Corrientes.—Italian earthenware. 213  
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 58 Torre, Marianola, Lima.—Wines. 660  
 59 Palacios, Fernando, Lima.—Wines and brandies. 660  
 60 Pandoy, José Maria, Aligasta.—Wines. 660

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- 3 Rio de la Loza, Manuel, City of Mexico.—Salts of sodium. 200
- 4 State Government of Yucatan, Merida.—Salts of sodium. 200
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- 32 Hernandez, Mrs. Amalia, City of Mexico.—Fancy shirts. 250
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222a State of Coahuila, Saltillo City.—  
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222b Pereda, Blas, San Luis Potosi  
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222d State Government of Hidalgo.—  
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228a Rul, Miguel.—Photographic  
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232 State Government of Mexico.—  
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## Chemical Manufactures.

- 1 Community of Heirs of Afana, Salinas de Afana, Province of Alava.—Salt obtained by filtering and by evaporation. 200
- 2 Salines of Torrevieja, Province of Alicante.—Salt. 200
- 3 Rosa Martinez, Joaquin de la, Berja, Province of Almeria.—Syrup of protoiodide of iron and of ferruginous Peruvian bark. 200
- 4 Zabala Iniguez, Justo, Dalias, Province of Almeria.—Syrup of ferruginous Peruvian bark and concentrated essence of sarsaparilla. 200
- 5 Padilla, Francisco, Almeria.—Carbonate of lead. 200
- 6 Sureda & Villalonga, Juan, San José, Ibiza, Baleares.—Chloride of sodium. 200
- 7 Estruch & Co., Andrés, Barcelona.—Manure. 200
- 8 Tobella & Argila, Francisco, J., Hospital de Llobregat, Province of Barcelona.—Manure. 200
- 9 Medinaceli, Duchess, Cardona, Province of Barcelona.—Sal gemma. 200
- 10 Sanchez, Miguel, Barcelona.—Mineral and sea salt. 200
- 11 Pons, Bartolomé, Sans, Province of Barcelona.—Cream of tartar and tartar crystal. 200
- 12 Fortuny Bros., Barcelona.
  - a Magnesia, mustard paper, etc. 200
  - b Almond oil. 201
- 13 Vte Mondova, Juan, San Juan, Porto Rico.—Cocoa butter, orange-flower water, citrate of lime, ricinus oil, almond oil, cocoanut oil, essential oil of orange-flower and lemon. 200
- 14 Dominguez, Celestino, Guyana, Porto Rico.—Cocoa butter, castor oil, and tobacco pepper essence. 200
- 15 Tauriño, Juan, Toledo.—Remedy for deafness. 200
- 16 Formiguera, G., Barcelona.—Pastilles, extracts, oil, syrups, liniments, etc. 200
- 17 Ferrer & Batlle, Barcelona.—Chemical and pharmaceutical preparations. 200
- 18 Arola, A., & Domenech, Francisco, Barcelona.—Chemical and pharmaceutical preparations. 200
- 19 Boada, G., & Travessa, Gracia, Province of Barcelona.—Sulphate of copper, chloride of tin, sulphuric acid, nitric acid, etc. 200
- 20 Provincial Commission, Burgos.—Calced and black animal bone. 200
- Regis Cisneros, Francisco, Burgos.—Cream of tartar. 200
- 22 Bensusan, Antonio J., Puerto-Real, Province of Cádiz.—Sea salt. 200
- 23 Calle, Bernardo, M. de la, Cadiz.—Sea salt. 200
- 24 Hidalgo y Berjano, Eduardo, Sanlúcar de Barrameda, Province of Cádiz.—Sea salt. 200
- 25 Forner Sales, Domingo, Burriana, Province of Castellon.—Orange flower and orange-flower water. 200
- 26 Corporation of Minglanilla, Province of Cuenca.—Sal gemma. 200
- 27 Gamboa y Calvo, José, Villalcayado, Province of Guadalajara.—Salt. 200
- 28 Muñoz, Marcelino, Imon, Province of Guadalajara.—Salt. 200
- 28a Marin, Manuel, Córdoba.—Essence of sarsaparilla, extract and syrup of eucalyptus, cod-liver oil, balsam opodeldoc, etc. 200
- 29 Leon Teruel, José, Huelva.—Salt obtained by evaporation. 200
- 30 Lopez de Codes, Tomás, Isle of Cristina, Province of Huelva.—Chemical guano. 200
- 31 Tapia y Pereira, Pedro, Isle Cristina, Province of Huelva.—Artificial guano. 200
- 32 Soriano, Aniceto, Jaen.—Salt obtained by evaporation. 200
- 33 Tiburcio Escabias, José, Jaen.—Salt. 200
- 34 Miguel Garcia, Manuel de, Jaen.—Salt. 200
- 35 Mas, Ramon, Lérida.—Barilla (impure soda). 200
- 36 Arteche, Angel María, Azofra, Province of Logroño.—Inalterable carbonate of iron. 200
- 37 Baanante, Juan, Chantada, Province of Lugo.—Mustard and cantharides powder. 200
- 38 Armesto Vinuesa, Francisco, Mondoñedo, Province of Lugo.—Peat. 200
- 39 Delf Factory of Sargadelos, Cerro, Province of Lugo.—Peat. 200
- 40 Jorge de la Peña, José, Lugo.—Peat. 200
- 41 Puerta, Gabriel de la, Madrid.—Emetic tartar. 200
- 42 Canales, Juan Bautista, Málaga.—Essence of lemon, citric acid. 200
- 43 Fuentes & Sons, Palencia.—Blister. 200
- 44 Escarpizo, Lorenzana, Augusto, Cangas, Province of Pontevedra.—Antiscorbutic and odontalgic elixir. 200
- 45 Gonzalez, Domingo Cecilio, Salamanca.—Nitrate of ammonia. 200

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- 47 Villar, José, Salamanca.—Pharmaceutical preparations. 200
- 48 Delgado, Joaquín, Seville.—Inalterable syrups. 200
- 49 Vinet, Troviño, & Co., Seville.—Citric acid, hyposulphate of soda, etc. 200
- 50 Monge & Sanz, Bonifacio, Soria.—Digital, extract of digital, digitaline, essence of sarsaparilla, etc. 200
- 51 Cuchi y Deixens, Tomás, Tarragona.—Arsenic, extract of tar, and meat in powder. 200
- 52 Eyries, Agustín, Valladolid.—Phosphate of lime and nitrate of soda. 200
- 53 Flor Carenou, & Tur, Zaragoza.—Extract of liquorice. 200
- 54 Díaz & Acebedo, Cleto, Havana, Cuba.—Preservative to prevent oxidizing of metals. 200
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# PHILIPPINE ISLANDS.

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*(South of South Avenue, Columns 13 to 17.)*

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- 5 Bandeira, A.S.B.M., Setubal.—Salt. 200
- 6 Branca, Anna Delphina, Alcacer do Sal.—Salt. 200
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- 10 Cresswell & Co., Lisbon.—Salt. 200
- 11 Castello Branco, João da S. F., Villa Franca de Xira.—Salt. 200
- 12 Delegny Bros., Lisbon.—Chemicals. 200
- 13 Franco, Pedro Augusto, Belem.—Pharmaceutical preparations. 200
- 14 Figueiredo, Joaquim, Avis.—Pharmaceutical preparations. 200
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- 21 Leite, Francisco de Paula, Alcacer do Sal.—Salt. 200
- 22 Lima, Guilherme A. E., Lisbon.—Pharmaceutical preparations. 200
- 23 Meirelles, Antonio Moreira de Souza, Faro.—Salt. 200
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- 27 Pires, João de Jesus, Lisbon.—Patent medicines. 200
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  - 33 Toriades, O'Neill, Setubal.—Salt. 200
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### Chemical Manufactures.

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<i>a</i> Rice, millet, sesame, barley, wheat, white sorghum.	620	1119 Ismail Effendi, Candia, Crete.—Barley.	620
<i>b</i> Lentils, beans, masch (vegetable).	621	1120 Kavilian, Stépan, Sivas.—Wheat.	620
<i>c</i> Dolique seed.	624	1121 Kutchuk Ali Agha, Dardanelles, Dardanelles.—Wheat.	620
1092 Medina, Government of, Hidjaz.—Wheat and barley.	620	1122 Manoli, Boyadjaki, Candia, Crete.—Barley.	620
1093 Mentefek, Government of, Bagdad.		1123 Mehemed Effendi, Dardanelles, Dardanelles.—Indian corn, sesame.	620
<i>a</i> Wheat, millet, and rice.	620	1124 Mehameda, Cus-Kuri, Dardanelles.—Rye.	620
<i>b</i> Beans, masch.	621	1125 Merdik, Mardin, Diarbekir.—Sesame.	620
<i>c</i> Dolique seed.	624	1126 Moussin Oglou Seid, Koniah, Koniah.	
1094 Mosul, Government of, Bagdad.		<i>a</i> Barley.	620
<i>a</i> Maize.	620	<i>b</i> Gray peas.	621
<i>b</i> Peas.	621	1127 Mourazede, Aleppo.—Unhulled rice.	620
<i>c</i> Coriander.	623		
<i>d</i> Flaxseed.	624		
1095 Serfiché, Government of, Monastir.—Wheat, rye, barley, and maize.	620		
1096 Smyrna, Government of, Aydin.			
<i>a</i> Wheat, maize, evrier, millet, sesame, white sorghum.	620		
<i>b</i> Peas and beans.	621		
<i>c</i> Fennel, cumin.	624		
1097 Suleimaneeyah, Government of, Bagdad.			
<i>a</i> Barley, millet, and rice.	620		
<i>b</i> Vetch and beans.	621		

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



## Agricultural Products.

- 1128 Moussa Oglou Veli, Alada, Koniah.  
—Rye. 620
- 1129 Moussin Effendi, Koniah, Koniah.  
—Ervier, a cereal. 620
- 1130 Moustapha Effendi, Cherkech,  
Castamouni.—Wheat and barley. 620
- 1131 Moustapha, Agha, Canea, Crete.—  
Barley. 620
- 1132 Nougai Baitmour, Adana, Ada-  
na.—Millet. 620
- 1133 Ohannes, Aleppo.—Wheat and  
barley. 620
- 1134 Olah Artin, Adana, Adana.—Oats.  
620
- 1135 Oudjou Christo, Yanina, Yanina.  
—White sorghum. 620
- 1136 Pachistizal, Volonia, Yanina.—  
Maize. 620
- 1137 Petro, Berat, Yanina.—Rice and  
oats. 620
- 1138 Portocalaki, Moustapha Agha,  
Candia, Crete.—Wheat. 620
- 1139 Salbé, Diarbekir.—Rice, hulled  
and unhulled. 620
- 1140 Salih, Ichkodra, Monastir.  
a Barley, rye, oats, wheat, and maize. 620  
b Beans. 621  
c Flaxseed. 624
- 1141 Salomon, Salonica.—Wheat, rye,  
oats, barley. 620
- 1142 Seid Chaban, Zubei, Yemen.  
a Maize, millet, and red, white, and yellow  
sorghum. 620  
b Lentils. 621  
c Dulique and indigo-plant seeds. 624
- 1143 Seid Mehemed Agha, Angora.  
a Wheat, barley, etc. 620  
b Beans, peas, lentils. 621  
c Coriander. 623
- 1144 Théophani, Nicoforaki, Canea,  
Crete.  
a Wheat, barley, Indian corn, oats. 620  
b Gray peas, vetch, beans, parsnip, celery,  
mihlie. 621  
c Leaf tobacco, mustard. 623
- 1145 Houllé, Government of, Bagdad.—  
Lentils, vetch, and beans. 621
- 1146 Kara Issalé, Government of,  
Adana.  
a Vetch. 621  
b Sage. 623
- 1147 Samos, Government of.  
a Vetch. 621  
b Anise seed. 624
- 1148 Saroukhan, Government of, Aydin.  
a Lentils. 621  
b Madder root. 622  
c Mustard seed. 624
- 1149 Mehemed, Hadji, Diarbekir.—  
Roast peas. 621
- 1150 Isaac, Hodja, Aleppo.—Lentils,  
peas, and masch. 621
- 1151 Ismail Agha, Koniah, Koniah.—  
Vetch. 621
- 1152 Mehemed Ali Agha, Saradjik,  
Dardanelles.—Beans, gray peas. 621
- 1153 Ahmed, Erzeroum.—Lentils, kid-  
ney beans, and peas. 621
- 1154 Aghoba, Kingnessa, Adana.—  
Lentils. 621
- 1155 Ali Ousta, Koniah, Koniah.—Kid-  
ney beans. 621
- 1156 Charchou Akassi, Diarbekir.—  
Lentils. 621
- 1157 Christo, Palatnos, Yanina.—  
Beans. 621
- 1158 Kachomia, Christo, Tdomane,  
Yanina.—Kidney beans. 621
- 1159 Diaba, Heudeurlé, Adana.—Kid-  
ney beans. 621
- 1160 Giorki, Aleppo.  
a Vetch. 621  
b Kuchéné seed. 624
- 1161 Mehemed Seid, Angora.  
a Kidney beans. 621  
b Cumin. 623
- 1162 Molah Ahmed, Adana, Adana.—  
Beans. 621
- 1163 Sidmaki, Sfakia, Crete.—Dried  
beans. 621
- 1164 Fetou, Aleppo.—Kidney beans. 621
- 1165 Yorghanothaki, Sfakia, Crete.—  
Vetch. 621
- 1166 Valah, Vandiria, Sfakia, Crete.—  
Lentils. 621
- 1167 Yousseuf Mamor, Diarbekir.—  
Kidney beans. 621
- 1168 Yousseuf Manoc, Aleppo.—Beans.  
621
- 1169 Akhati, Giorki, Aleppo.—Soap-  
wort root. 622
- 1170 Moustapha, Hadji, Marach,  
Aleppo.—Scammony. 622
- 1171 Hazrou, Aleppo.—Coriander seed.  
623
- 1172 Imperial Administration, Con-  
stantinople.—Tobacco. 623
- 1173 Kandi Bros., Erguiré, Yanina.—  
Snuff. 623
- 1174 Mehemed, Koniah, Koniah.—Cu-  
min. 623
- 1175 Nassou Tarrouchan, Ichkodra,  
Monastir.—Leaf tobacco. 623
- 1176 Omer Oglou Kassan, Tchan, Dar-  
danelles.—Leaf tobacco. 623
- 1177 Rahimin David, Tripoli, Tripoli.  
—Cumin. 623
- 1178 Ramazan, Effendi, Smyrna, Ay-  
din.—Tobacco. 623
- 1179 Abil, Aleppo.—Snuff. 623
- 1180 Djourbachi, Antolu, Dardanelles,  
Dardanelles.—Cumin and anise. 623
- 1181 Bedros, Antoine, Philadelphia,  
Pa.—Turkish tobacco. 623
- 1182 Bekir Bey, Marach, Aleppo.—  
Scammony root. 623
- 1183 Costanti, Aydonat, Yanina.—  
Snuff. 623
- 1184 Aleppo, Government of.—Tobac-  
co. 623
- 1185 Amassia, Government of, Sivas.—  
Tobacco. 623
- 1186 Kenidje, Government of, Salonica.  
—Tobacco. 623
- 1187 Haskanorich Ali, Korimdja, Bos-  
nia.—Tobacco. 623
- 1188 Manoli Calergui, Papa, Canea,  
Crete.—Leaf tobacco. 623
- 1189 Takssim Effendi, Tchataidja, Ya-  
nina.—Tobacco. 623
- 1190 Tokatlou, Trebizond.—Leaf to-  
bacco. 623

## Agricultural, Animal, and Vegetable Products.

- 1191 Yani, Oglou Andin, Angora, Angora.—Tobacco. 623  
 1192 Youssof, Chaouch, Nardat, Yanina.—Tobacco. 623  
 1193 Youssof, Chaouch, Tchataidja, Yanina.—Tobacco. 623  
 1194 Manouk, Youssof, Aleppo.—Tobacco. 623  
 1195 Kayod, Hussein, Mardin, Diarbekir.—Fennel seed. 624  
 1196 Moustapha Effendi, Koniah, Koniah.—Hemp seed. 624  
 1197 Kouyoun Oglou, Andonic.—Seed. 624  
 1198 Yousouf, Hadji, Diarbekir.—Palma-christi seeds. 624  
 1199 Kazikli, Government of, Aydin.—Anise seed. 624  
 1200 Cus-Kuri, Government of, Dardanelles.—Dolique seed. 624  
 1201 Djbra Gaza, Aleppo.—Fennel seed and cumin. 624  
 1202 Ali Bin Mehemed, Tripoli, Tripoli.—Lucern seed. 624  
 1203 Youssof, Aleppo.—Hemp, palma-christi, mekineche, melon, and watermelon seeds. 624  
 1204 Tarai, Djemetré, Bokeva, Monastir.—Flax and hemp seed. 624  
 1205 Maneza, Government of, Aydin.—Flaxseed. 624  
 1206 Adana, Government of.—Dolique seed. 624

## Land Animals.

- 1207 Mazloum Aghiah, Constantinople.—Insects. 638

## Water Animals, Fish Culture and Apparatus.

- 1208 Ali Zotte, Volonia, Yanina.—Coral. 645

## Animal and Vegetable Products.

- 1209 Lachite, Government of, Crete.—Sponges. 650  
 1210 Themeli, N., New York, N. Y.—Sponges. 650  
 1211 Mansour, Hadji, Tripoli, Tripoli.—Sponges. 650  
 1212 Djidé, Government of, Hidjaz.—Sponges. 650  
 1213 Gallinos, Rhodes, Dardanelles.—Sponges. 650  
 1214 Théophani, Nicosforaki, Canea, Crete.  
   a Cheese. 651  
   b Leather and skins. 652  
   c Honey. 654  
   d Dried cherries. 656  
 1215 Minassian Miguerdji, Tokat, Sivas.—Cheese. 651  
 1216 Markora, Salonica.—Cheese. 651  
 1217 Mikahil Agha, Adrianople.—Lamb skins. 652  
 1218 Mikaél, Kotchissar, Castamouni.—Beaver skin. 652  
 1219 Mehameda, Dardanelles.—Morocco. 652

- 1220 Starri, Oglou, Kotchissar, Castamouni.—Marten skin. 652  
 1221 Nichan, Sivas, Sivas.—Skins. 652  
 1222 Nely, Ali, Marach, Aleppo.—Morocco. 652  
 1223 Moustapha, Ourpha, Aleppo.—Leather. 652  
 1224 Moustapha, Erreroum.—Leather, morocco, etc. 652  
 1225 Mohadjeri Nabe, Adana, Adana.—Gazelle skin. 652  
 1226 Abdul Medjid, Vesalomon.—Goat skin. 652  
 1227 Abdoulah, Aroubirje, Zoubei, Bagdad.—Morocco. 652  
 1228 Seyfoullah, Roostchook, Danube.—Leather. 652  
 1229 Sari Faki Moustapha, Marach, Aleppo.—Morocco. 652  
 1230 Safran Bolu, Zaferemboli, Castamouni.—Morocco. 652  
 1231 Panoucha, Yanina.—Leather. 652  
 1232 Osman Agha, Koniah.—Leather. 652  
 1233 Mehemed, Ousta, Boschir, Koniah.—Leather. 652  
 1234 Omer, Ousta, Piseren, Monastir.—Morocco. 652  
 1235 Ohannès Agha, Angora.—Angora goat skins. 652  
 1236 Ahmed Agha, Koniah.—Leather and morocco. 652  
 1237 Yanaki Kalviro, Yanina.—Goat skin. 652  
 1238 Youssof, Caraman, Koniah.—Morocco. 652  
 1239 Vasali Borbo, Yanina.—Morocco. 652  
 1240 Tosty, Galota, Chio, Dardanelles.—Leather. 652  
 1241 Chinopli, Thomas, Teralu, Yanina.—Sheep skin. 652  
 1242 Sirkilé, Olan Andia, Angora.—Weasel skin. 652  
 1243 Sirch, Oglou, Andon, Angora.—Wolf, weasel, and fox skin. 652  
 1244 Atanach, Dardanelles, Dardanelles.—Sheep skin. 652  
 1245 Andria, Trebizond.—Grebe skins. 652  
 1246 Andon, Chio, Dardanelles.—Morocco. 652  
 1247 Anastach, Kangre, Castamouni.—Goat skin. 652  
 1248 Ali, Omer, Bigha, Dardanelles.—Deer skin. 652  
 1249 Ali, Salonica.—Leather. 652  
 1250 Ali, Mosul, Bagdad.—Beaver, fox, and wolf skin. 652  
 1251 Ahmed, Ousta, Castamouni, Castamouni.—Angora goat skin. 652  
 1252 Zelo, Christa, Yanina.—Red morocco. 652  
 1253 Cherbedji Mehemed, Marach, Aleppo.—Goat and sheep skin. 652  
 1254 Moussa Agha, Cheik, Diarbekir.—Goat and sheep skin. 652  
 1255 Chaban Oglou Mehemed, Koniah, Koniah.—Cat skin. 652

## Animal and Vegetable Products.

- 1256 Cassal, Adana, Adana.—Goat and sheep skin. 652
- 1257 Cafak, Abdoullah, Marach, Aleppo.—Morocco. 652
- 1258 Bekir Agha, Sivas, Sivas.—Leather, morocco, and skins. 652
- 1259 Balto Oglou Youssouf, Guengnek, Castamouni.—Morocco. 652
- 1260 Glano, Glorki, Yanina.—Skin. 652
- 1261 Eyoup, Ourpha, Aleppo.—Goat and sheep skin. 652
- 1262 Echef Effendi, Trebizond.—Morocco. 652
- 1263 Ebouker, Chérif, Tripoli, Tripoli.—Sheep skin. 652
- 1264 Dchoban Oglou Mehemed, Koniah.—Fox skin. 652
- 1265 Corporation of Curriers, Smyrna.—Leathers, skins, and morocco. 652
- 1266 Dauli, Christo, Yanina.—Morocco. 652
- 1266a Corporation of Curriers, Damascus.—Leather and morocco. 652
- 1267 Calman, Government of, Syria.—Goat skin. 652
- 1268 Cherishor, Government of, Bagdad.—Lamb skin. 652
- 1269 Bourd, Government of, Bagdad.—Morocco. 652
- 1270 Ohanès Agha, Marach, Aleppo.—Ounce and weasel skins. 652
- 1271 Bagdad, Government of.—Buffalo skin and morocco. 652
- 1272 Moustapha, Hadji, Marach, Aleppo.—Skins. 652
- 1273 Adana, Government of.—Roebuck and calf skins. 652
- 1274 Godchè, Erondi, Prévészé, Yanina.—Leather, morocco. 652
- 1275 Gulbin, Oglou Mehemed, Koniah, Koniah.—Jackal skin. 652
- 1276 Tahif, Government of, Hidjaz.  
a Sheep and goat skin. 652  
b Honey. 654
- 1277 Kara Issali, Government of, Adana.—Deer skin. 652
- 1278 Feulgehete, Government of, Syria.—Deer skin. 652
- 1279 Erzeroum, Government of.  
a Goat skin, morocco. 652  
b Down. 653
- 1280 Diarbekir, Government of.—Leather and morocco. 652
- 1281 Dardanelles, Government of.—Goat skin. 652
- 1282 Damascus, Government of, Syria.  
a Sheep skin. 652  
b Honey and wax. 654
- 1283 Constantinople, Government of.—Morocco and other leathers. 652
- 1284 Manik, Hadji, Erzeroum.—Fox skin. 652
- 1285 Ismail Effendi, Hadji, Koniah, Koniah.—Otter skin, etc. 652
- 1286 Ismail, Hadji, Aintab.—Calf skin, leather, and morocco. 652
- 1287 Ibrahim, Hadji, Angora.—Leather and morocco. 652
- 1288 Damiano, Hadji, Bosnia.—Bear, fox, weasel, badger, and marten skins. 652
- 1289 Amparson, Hadji, Trebizond.—Jackal, fox, weasel, lamb, and sable skins. 652
- 1290 Ahmed, Hadji, Angora.—Goat and sheep skin. 652
- 1291 Achmet Agha, Hadji, Angora.—Lamb skin. 652
- 1292 Rafoul, Hodja, Marach, Aleppo.—Wildcat, fox, otter, and jackal skins. 652
- 1293 Hassan Oglou Ahmed, Dardanelles, Dardanelles.—Wildcat, fox, beaver, weasel, and jackal skins. 652
- 1294 Hassan, Ousta, Castamouni.—Morocco. 652
- 1295 Harani Oglou, Castamouni, Castamouni.—Ounce skin. 652
- 1296 Haho, Babanoun Hamed Agha, Koniah.—Morocco. 652
- 1297 Yassin, Hadji, Saret, Diarbekir.—Leather. 652
- 1298 Rouchen, Hadji, Trebizond.—Goat and calf skins. 652
- 1299 Omer Agha, Hadji, Diarbekir.—Morocco. 652
- 1300 Moustapha Ahmoud, Hadji, Tripoli, Tripoli.—Morocco, tanned skins, etc. 652
- 1301 Kurdju, Hadji, Diarbekir.—Beaver skin. 652
- 1302 Karabet Agha, Erzeroum.—Weasel and wolf skins. 652
- 1303 Kara, Poutamo, Prévészé, Yanina.—Goat and sheep skin. 652
- 1304 Ismail, Agha, Boschir, Koniah.—Leather. 652
- 1305 Ismail, Hadji, Marach, Aleppo.—Leather. 652
- 1306 Isaac, Aleppo, Aleppo.—Lamb skin. 652
- 1307 Ipsilanki & Co., Samos, Castamouni.—Leather. 652
- 1308 Ibrahim, Uskup, Monastir.—Morocco. 652
- 1309 Hussein Effendi, Salonica.—Tanned hides and morocco. 652
- 1310 Mehemed Emin, Mosul, Bagdad.—Morocco. 652
- 1311 Mehemed Effendi, Adrianople.—Leather, morocco, goat, and calf skins. 652
- 1312 Mehemed, Koniah, Koniah.—Wolf skin. 652
- 1313 Masloum Agha, Candia, Crete.—Goat skins and morocco. 652
- 1314 Salomon, Salonica.  
a Goat and lamb skins. 652  
b Virgin wax. 654  
c Cherry, orange, apricot, prune, verjuice, and gourd marmalade. 656  
d Brandy, wine, and vinegar. 660
- 1315 Marouquin, Dardanelles.—Morocco. 652
- 1316 Kurjut Casmat, Diarbekir.—Fox and weasel skins. 652
- 1317 Piseren, Government of, Monastir.—Morocco. 652
- 1318 Abdoullah, Ousta, Angora.—Leather. 652

## Animal and Vegetable Products.

- 1319 Ana Bini, Tanasse, Sarret, Diarbekir.—Wax. 654
- 1320 Yeni Ahmed, Chür, Yanina.—Wax. 654
- 1321 Ahmed Agha, Lapseki, Dardanelles.—Yellow wax. 654
- 1322 Sahalim Bacbac, Tripoli, Tripoli.—Honey. 654
- 1323 Derbabian, Pedros, Sivas, Sivas.—Yellow wax 654
- 1324 Ohannès, Son of Varcha, Angora.—Honey. 654
- 1325 Moussin Effendi, Koniah, Koniah.—Yellow wax. 654
- 1326 Ahmed, Aintab, Aleppo.—Honey and wax. 654
- 1327 Samos, Government of. 654  
a Honey. 654  
b Wine and brandy. 660
- 1328 Medina, Government of, Hidjaz.—Honey. 654
- 1329 Cherif Effendi, Trebizond. 654  
a Honey. 654  
b Gourd, pear, and rose marmalade. 656  
c Mulberry vinegar. 660
- 1330 Arpadji Mahmoud Agha, Adana, Adana.—Wax. 654
- 1331 Lefterimo, Aposthol, Tirala, Yanina.—Honey. 654
- 1332 Andonaki, Angora.—Wax. 654
- 1333 Pisereken, Government of, Monastir.—Crude wax. 654
- 1334 Ali Zotte, Golos, Yanina.—Yellow wax. 654
- 1335 Mahmoud Agha, Adana, Adana.—Honey. 654
- 1336 Keranche Oglou, Kotchissar, Castamouni.—Wax. 654
- 1337 Hussein Dédé, Kllid-Bahar, Dardanelles.—Honey. 654
- 1338 Haktar Mehemed, Aleppo.—Yellow wax. 654
- 1339 Osman, Hadji, Sarret, Diarbekir.—Honey. 654
- 1340 Volonia, Government of, Yanina.—Honey and wax. 654
- 1341 Suleimaneeyah, Government of, Bagdad.—Wax. 654
- 1342 Smyrna, Government of, Aydin. 654  
a Honey and wax. 654  
b Dried grapes, raisins. 656  
c Wine. 660
- 1343 Abdourahman, Erzeroum.—Yellow wax. 654
- 1344 Abdourahman, Zubei, Ylemen.—Wax. 654
- 1345 Catari, Giorki, Golos, Yanina.—Olives. 656
- 1346 Ali Oglou Moussa.—Dried morrellas. 656
- 1347 Ahmed Agha, Aleppo.—Raisins. 656
- 1348 Yussuf Sarret, Diarbekir.—Raisins. 656
- 1349 Tetoullah Effendi, Darendé, Sivas.—Prunes. 656
- 1350 Serdar, Hassan Oglou Hussin, Canea, Crete.—White and black raisins. 656
- 1351 Seld, Mehemed Agha, Angora.—Dried apples, prunes, cherries, apricots. 656
- 1352 Pembedje, Oglou Moustapha, Mardin, Diarbekir.—Prunes. 656
- 1353 Koyoun, Andonik, Angora. 656  
a Dried and salt beef, sausages. 656  
b Brandy, wine, and vinegar. 660
- 1354 Kirkor, Avakir, Diarbekir.—Mulberry paste. 656
- 1355 Hussein, Gaat, Mardin, Diarbekir.—Prunes. 656
- 1356 Haskanorich, Ali, Korimdja, Bosnia.—Prunes. 656
- 1357 Osman, Hadji, Koniah, Koniah.—Raisins. 656
- 1358 Ali, Hadji, Aleppo.—Dried prunes, quinces, cherries, and apricots. 656
- 1359 Zaferampolo, Government of, Castamouni.—Dried prunes. 656
- 1360 Nitch, Government of, Danube.—Prunes. 656
- 1361 Naali, Government of, Aydin.—Dried figs. 656
- 1362 Mikali, Nicolaidi, Canea, Crete.—Orange, apple, orange blossom, cherry, and pear marmalade. 656
- 1363 Mikail, Aleppo. 656  
a Dried prunes, cherries, apricots, raisins, and apples. 656  
b Mastic. 660
- 1364 Merkioss, Mamor, Diarbekir.—Dried mulberries. 656
- 1365 Mehemed Aiché, Tripoli, Tripoli.—Soup and vegetable paste, vermicelli. 656
- 1366 Mehemed, Malatia, Diarbekir.—Mulberry paste. 656
- 1367 Mazloum, Aghiah, Constantinople.—Trehala and trehalose pastes. 656
- 1368 Maki Yani, Chio, Dardanelles.—Mastic, orange, rose, and lemon-blossom confitures. 656
- 1369 Mark, Samos, Samos.—Muscat raisins. 656
- 1370 Kournik Ali Agha, Kangre, Castamouni.—Dried apricots. 656
- 1371 Pedros, Mihalgazi, Castamouni.—Raisins. 656
- 1372 Over Agha, Malatia, Diarbekir.—Raisins. 656
- 1373 Osman Bin Mohamed, Korimdja, Bosnia.—Prunes. 656
- 1374 Omer Djerball, Tripoli, Tripoli.—Vermicelli and soup paste. 656
- 1375 Moustapha, Malatio, Diarbekir.—Dried peaches. 656
- 1376 Ateuf Dédé, Broussa, Broussa.—Angelica-root marmalade 656
- 1378 Widin, Government of, Danube. 656  
a Sausages and smoked beef tongues. 656  
b Raspberry wine. 660
- 1379 Moustapha Agha, Adana, Adana.—Raisins. 656
- 1380 Ahmed, Erzeroum.—Dried prunes. 656
- 1381 Mehemed Djebali, Tripoli, Tripoli.—Semoule flour. 657
- 1382 Koudour Hadji, Aleppo.—Grenade syrup. 659

## Vegetable Products, Wines, Textile Substances.

- 1383 Ohannes, Diarbekir.—Grape syrup. 659
- 1384 Central Drug Store, Constantinople.—Fruit syrups, etc. 659
- 1385 Ispiro, Salonica.—Orange, cherry, and grenade syrups. 659
- 1386 Raftopoulos, Nicolas.—Mint, sage, and almond liquors. 660
- 1387 Kirkor Effendi, Erzeroum.—Alcohol. 660
- 1388 Karabet, Diarbekir.—Orange, rose, juniper, and other brandies. 660
- 1389 Ychrapalaki, Hadji, Nicolas, Retimo, Crete.—Mulberry brandy. 660
- 1390 Gulbing Oglou Kakout, Koniah, Koniah.—Wine and brandy. 660
- 1391 Salomon, Gumuldjin, Salonica.—Wine. 660
- 1392 Retimo, Government of, Crete.—Wine and brandy. 660
- 1393 Monastir, Government of.—Wines. 660
- 1394 Gostcho Djivaré, Prévèzé, Yanina.—Wine. 660
- 1395 Vafiadi Giorki, Salonica.—Wine. 660
- 1396 Distillery of Zahari, Piseren, Monastir.—Brandy. 660
- 1397 Tountcha Litché, Tirnova, Yanina.—Wine. 660
- 1398 Tomochordo, Piseren, Monastir.—Wine. 660
- 1399 Tietora, Theodore, Samos.—Muscat wine. 660
- 1400 Théophasaki Ysiako, Canea, Crete.—White wine. 660
- 1401 Stamadi Marneraki, Lachite, Crete.—Red wines. 660
- 1402 Pereno Papa, Adana, Adana.—Brandy. 660
- 1403 Pefkiades, John, Samos.—Muscat wine. 660
- 1403a Yussep, Tokat, Sivas.—Rose mastic. 660
- 1404 Papaz Oglou, Salonica.—White wine. 660
- 1405 Nicoloreuzi Bros., Samos.—Muscat wine. 660
- 1406 Yanaki, Nicolas, Ile of Bousdja, Dardanelles.—Wine and vinegar. 660
- 1407 Manoli Muzé, Tirnova, Yanina.—Vinegar. 660
- 1408 Direction of the Vineyards Pacha Liman, Broussa.—Red and white wines, cognac. 660
- 1409 Leonisaki, Dimitri, Canea, Crete.—Brandy. 660
- 1410 Cafejedaki, John, Samos.—Alcohol and wines. 660
- 1411 Bodou Agha, Diarbekir.—Wine. 660
- 1412 Bano, Adana, Adana.—Wine. 660
- 1413 Bedré, Anton, Aleppo.—Vinegar. 660
- 1414 Andin Chako, Narda, Yanina.—Mulberry brandy. 660
- 1415 Yussep, Tokat, Sivas.—Rose vinegar and brandy. 660
- 1416 Yani, Lachite, Crete.—Mulberry brandy. 660
- 1417 Yani, Pappa Antoanaki, Lachite, Crete.—Grape brandy. 660
- 1418 Mehanedji, Foly, Candia, Crete.—Rose brandy and wine. 660
- 1419 Manoli Prisi, Candia, Crete.—Wine and white brandy. 660
- 1420 Ipsamarki Yani, Ile of Bousdja, Dardanelles.—Brandy. 660
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- 1441 Mardill, Oustidi, Diarbekir.—Crude cotton. 665
- 1442 Laz Osman, Kangre, Castamouni.—Cotton. 665
- 1442a Kozon, Andonaki, Angora.—Cotton. 665

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- 1444 Ibrahim Effendi, Gueugnek, Castamouni.—Cotton. 665
- 1445 Amassia, Government of, Sivas. a Cotton. 665  
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- 1447 Dimitri, Constanti, Tirala, Yanina.—Cotton. 665
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

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Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 140,000; its weekly edition over 88,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of THE SUN printed every week during the year ending March 11, 1876.

WEEK ENDING	COPIES PRINTED.	WEEK ENDING	COPIES PRINTED.
March 20.....	849,382	September 18.....	860,358
27.....	845,802	25.....	858,778
April 8.....	857,956	October 2.....	863,935
10.....	863,556	9.....	870,820
17.....	855,076	16.....	878,082
24.....	858,270	23.....	874,625
May 1.....	869,542	30.....	876,160
8.....	867,550	November 6.....	908,580
15.....	877,450	13.....	852,372
22.....	874,946	20.....	847,815
29.....	866,276	27.....	836,248
June 5.....	873,782	December 4.....	845,378
12.....	869,769	11.....	1,042,716
19.....	880,348	18.....	956,294
26.....	883,846	25.....	933,864
July 8.....	898,862	January 1.....	983,987
10.....	867,574	8.....	952,201
17.....	877,400	15.....	953,019
24.....	876,282	22.....	969,910
31.....	874,216	29.....	967,850
August 7.....	865,558	February 5.....	993,030
14.....	875,982	12.....	1,024,647
21.....	880,488	19.....	1,027,209
28.....	870,502	26.....	1,014,766
September 4.....	872,211	March 4.....	1,014,993
11.....	860,755	11.....	1,028,951
TOTAL.....		46,799,769	

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

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- 1 Barnes, A. S., & Co., New York, N. Y.—School books, maps, charts, etc. T 73 to 78. 300
- 1a New York Institution for the Blind, New York, N. Y.—Maps, mathematical apparatus, books, tablet for tangible writing and musical annotation. (*South Gallery.*) 300
- 2 New York Silicate Book Slate Co., New York, N. Y.—School book slates, liquid blackboard slating, blackboards on wall, cloth, and paper. T 68. 300
- 2a National School Furniture Co., New York, N. Y.—School furniture. T 59. 300
- 3 Smith, J. L., Map Publisher & Manufacturer, No. 27 South Sixth street, Philadelphia.—Wall maps, pocket maps, atlases, guide books, globes. A large assortment of plain and mounted drawing-paper, all widths and lengths, and prepared to order; map cases and spring map rollers, hold four to sixteen large maps. 1st, for economy of space; 2d, they preserve the maps; 3d, they do not get out of order; 4th, they work easily. See circulars. T 74. 300
- 3a Shepherd, Henry E., Superintendent of Public Instruction, Baltimore, Md.—Book-case (as prescribed), examination work, drawings, school furniture. (*South Gallery.*) 300
- 4 Moeller, Peter W., New York, N. Y.—Adjustable blackboard frame. Q 78. 300
- 4a Lloyd, E., Philadelphia, Pa.—Maps. T 78. 300
- 5 Nims, H. B., & Co., Troy, N. Y.—Terrestrial and celestial globes. P 77. 300
- 5a Doyle, Bros., Bangor, Me.—School desk and folding seat. W 53. 300
- 6 McDermott, Francis, New York, N. Y.—School and library globes, slated globes. T 73 to 77. 300
- 7 Mitchell, S. A., Philadelphia, Pa.—Atlases, maps, engravings, etc. T 73. 300
- 7a Boothby, Chas. W., New Orleans, La.—Bound manuscript and album of drawings. (*South Gallery.*) 300
- 8 Schermerhorn, J. W., & Co., New York, N. Y.—Books, charts, and modern school material. (*South Gallery.*) 300
- 8a American Missionary Association, New York, N. Y.—Map, pictures of institutions, catalogues, histories, and examination papers. T 47 (*South Gallery.*)
- 9 Peirce, I. Newton, Philadelphia, Pa.—Combination desks, seats, settee, blackboard, model of a log cabin school house, maps. (*Pennsylvania Educational Building.*) 300
- 9a Roos, Peter, Boston, Mass.—Drawings. (*East Gallery.*) 300
- 10 Steiger, E., 22 & 24 Frankfort street, New York, N. Y.  
a Kindergarten material, kindergarten books. 300  
b Ahn-Henn's series of German and French school books for Americans, with reading charts, readers, and keys; German school books for Germans in America; automatic tellurian and school clock combined; Schedler's terrestrial and celestial globes, of from three to twenty inches diameter, costing from \$1.50 to \$175 each, altogether sixty different numbers; Schedler's relief maps. T 73 to 78. 300
- 10a Schedler, Jos., Jersey City Heights, N. J.—Terrestrial and celestial globes and relief maps. T 74. 300
- 10b Andrews, A. H., & Co., Chicago, Ill.—Globes, apparatus, and maps. T 67. 300
- 10c Excelsior School Furniture Manufacturing Co., Cincinnati, O.—School furniture and apparatus, geographical models. T 52. 300
- 10d Ingham University, Le Roy, N. Y.—Paintings and crayons. T 40. 300
- 11 Cowperthwait & Co., Philadelphia, Pa.—T 73.  
a Text books and wall maps for schools. 300  
b Illustrated works. 306
- 11a Adams, S. C., Cincinnati, O.—Illustrated map of the world's history. T 73. 300
- 11b Whitall, Henry, Philadelphia, Pa.—Movable planispheres of the heavens, astronomical indicator. (*South Gallery.*) 300
- 12 Sower, Potts, & Co., Philadelphia, Pa.—T 74.  
a Outline wall maps. 300  
b Normal school books. 301  
c Publications of five generations of Sower family. 306
- 13 Ditson, J. E., & Co., Philadelphia, Pa.—Sheet music. T 73 to 78. 302

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## School Text Books, Apparatus, Statistics, etc.

- 13a Massachusetts Institute of Technology**, Boston, Mass.—Students' work, drawings, designs, note-books, theses, published memoirs, models, apparatus, inventions, metallurgical products, etc. (*East Gallery*). 302
- 14 Stevens Institute of Technology**, Hoboken, N. J.—A school of mechanical engineering. Course, four years in mathematics, physics, chemistry, mechanical drawing, mechanical engineering, French, German, and belles-lettres, with extensive laboratories, workshops, drawing-rooms, etc. Exhibit consists of instruments of measurement and for illustration, exhibiting methods of instruction. Designs of machinery made by students, and finished machines and instruments actually constructed by students; these illustrating the results of instruction. Lastly, results of original investigations carried out by members of the faculty. Illustrated catalogues sent on application. T 67. 302
- 14a Cooper Union Evening School of Science and Art**, New York, N. Y.—Collection of drawings. T 46. 302
- 15 Hampton Normal & Agricultural Institute**, Hampton, Va.—Views, oil paintings, ground plan of building and of experimental farm; photographs of building and of students, examination papers. (*South Gallery*). 302
- 15a Meyer, Louis**, Philadelphia, Pa.—Sheet music and music books. T 73 to 78. 302
- 15b American Printing House for the Blind**, Louisville, Ky.—Books and apparatus for the blind, reports. (*South Gallery*). 303
- 16 State of Indiana Educational Department** (by S. H. Smart, Indianapolis).—Bound volumes of examination manuscripts, by pupils of schools at Indianapolis, Evansville, Terre Haute, Fort Wayne, Logansport, Richmond, Goshen, Plymouth, Bedford, Huntington, Elkhart, Lawrenceburg, Mishawaka, Kokomo, Vevay, Delphi, Franklin, Bartholomew county, Martinville, Salem, Vanderburg county, and Wayne county.  
Reports and works of Indiana authors.  
Drawings from schools.  
"Indiana School Journal," plans of buildings, maps of cities, school blanks, etc.  
Herbariums and botanical specimens prepared by pupils of schools at Bedford and Indianapolis.  
School apparatus from Terre Haute.  
Specimens from Owen cabinet.  
Mineral collection by pupils of Huntington schools.  
Electrical apparatus for weighing under glass, invented by Prof. H. W. Wiley, Purdue University.  
Chemical products by pupils of Purdue University.  
Indiana fishes, prepared by Prof. Cope-land, of Indianapolis High School.  
Zoological specimens, prepared by pupils of Indianapolis High School.  
Native woods of Huntington county, by pupils of Huntington city schools.  
Drawings from Fort Wayne, Indianapolis, and La Fayette schools.  
Photographed blackboard work, specimens of penmanship and written music from Indianapolis schools.  
School law of the State, condensed.
- Photographed blackboard work from La Fayette, Fort Wayne, and Terre Haute schools.  
Photographs of prominent educators.  
Primary work of Indianapolis and Fort Wayne schools.  
Models of Ward and High School buildings at Indianapolis, Fort Wayne, Evansville, Muncie, Terre Haute, and La Fayette.  
Model of log school house, the first built in Delaware county, Indiana.  
Charts, exhibiting school system and its growth, and the college system of the State.  
Banners, exhibiting school system, statistics, distribution of school houses, and the growth of the system in twenty years by semi-decades.  
Banners showing Purdue, Asbury, and State Universities, Wabash, Union, Christian, and Eastham Colleges.  
Banners showing State and Northern Indiana normal schools, and Indianapolis and Huntington city systems. (*South Gallery*). 304
- 17 State of Michigan** (F. W. Noble, Secretary, Detroit, Mich.).—Michigan school system, its history, statistics, plans, elevations, interior views, and students' work in public, primary, graded, and high schools, universities, and colleges. Rare birds and marine and land animals from museum of Michigan University. (*South Gallery*). 304
- 18 State of Wisconsin Educational Department** (by Edward Searing, Superintendent of Public Instruction).—Students' work, photographs of school buildings, educational map, books, etc. (*South Gallery*). 304
- 19 Educational Exhibit of Ohio** (by Charles S. Smart, State Commissioner of Common Schools).—History of educational effort and progress in Ohio; local histories of colleges, universities, private and technical schools; city, town, and village schools, giving rise and development of graded school system, etc.; manuscripts of students' work, including drawing, penmanship, arithmetic, English grammar, English composition, geography, natural sciences, music, high school branches, etc.; graphic illustrations of school statistics and progress; photographs and lithographs of school and college grounds and buildings; reports of city schools for year ending 1875, and of State Commissioner of Common Schools from 1837 to 1875 inclusive; catalogues of colleges and technical schools; reports of benevolent institutions; centennial contribution from the pioneer association of Athens county, Ohio. (*South Gallery*). 304
- 19a University of Nebraska**.—Photographs of building, etc. (*South Gallery*). 304
- 20 State of Rhode Island Board of Education**, Providence, R. I. (by T. B. Stockwell, Commissioner of Public Schools).—General history of education in the State; full set of State school reports; common school manual; annual reports for 1875 from the various cities and towns; documents relating to Brown University; history of Rhode Island Institute of Instruction; catalogues of State Normal School and Mowry & Goff's School; set of State and Newport school blanks; file



## School Statistics, Students' Work.

of the Rhode Island "Schoolmaster;" statistical chart; school map of State and cities of Providence and Newport; course of study for State Normal School.

Providence public schools—Examinations from grammar and high schools, map and free hand drawing, design from flat copy, industrial drawings and crayon portraits. Warner's Commercial College—Drawings and penmanship; written examinations from primary, intermediate, grammar, and high schools, with map and free hand drawing and designs from Newport, Westerly, Woonsocket, Coventry, Warwick, Richmond, and Smithfield public schools.

Perspective views of new library of Brown University and Woonsocket new high school, with plans and specifications; plans of some of the school buildings in Providence; views of Rhode Island State Normal School (study hall), Friends' Boarding School, and intermediate school of Providence; views of school houses of Tiverton, Bristol, Newport, and Woonsocket.

Class volume of photographs, Brown University, 1876; school furniture from E. M. Thurston, Providence; blackboard from H. H. Burrington, Providence; book holders from I. S. & C. N. Brown, Providence. (*South Gallery*.) 304

- 23 State of New Hampshire, Department of Public Instruction (by John W. Simonds, State Superintendent, Franklin, N.H.).—Kindergarten school—Specimens of kindergarten work. Public schools—States covered with work of primary pupils; specimens of scholars' written work, and examinations, compositions, drawings, penmanship; maps and plans; photographs and plans of school buildings and rooms; photographs of school superintendents and teachers; illustrated school register; wooden model of school-house.

Academies, seminaries, and high schools—Photographs and plans of buildings and rooms; photographs of teachers and students; students' written work, drawings, etc.

Dartmouth College—Bound catalogues and pamphlets, students' examination papers, drawings, illustrated programme, map of grounds, portraits of faculty and class of 1876; plans and views of buildings and rooms; relief map of the White Mountains.

State Normal School—Reports; students' written work.

Thayer School of Engineering—Model Pratt truss railroad bridge.

Chandler Scientific School—Drawings, surveying papers, railroad map, models in plaster, examination papers and abstracts; essays.

Agricultural College—Geological map. State school laws, reports, and registers; town school reports, history and catalogue of academies, etc.; records of normal school; Bouton's provincial papers.

Educational publications; histories of towns; text books used 100 years ago; text books in present use; publications of E. C. Eastman. (*South Gallery*.) 304

- 22 State of Connecticut Educational Department (by B. G. Northrop, Secretary, Hartford, Conn.).—Work by scholars and Chinese students; photographs of school-

houses; works by former members of Yale College. (*South Gallery*.) 304

- 23 State of Illinois, Department of Public Instruction (by S. M. Etter, Superintendent).—Reports of the department, and history of education in the State.

Public schools—Pupils' work, school apparatus, drawings, books, maps, etc.

Chicago public schools—Portfolios of examination papers, photographs, drawings, etc.

Colleges and Seminaries—Work of students, museums, etc.

Industrial University, Champaign, Ill.—Books, portfolios, and charts, containing work of students.

Illinois Normal Universities—Work of students, museums, etc. (*East Gallery*.) 304

- 24 State of Maine, Educational Department (by Warren Johnson, State Superintendent, Augusta, Me.).

Kindergarten school, Lewiston; public schools in Portland, Bangor, Bath, Lewiston, Calais, Augusta, and various other cities and towns; private schools; Johnson Home School for Boys; Abbott School for Boys; St. Catharine's School for Girls, and others. School furniture from Doyle Bros., Bangor.

Bowdoin College, Colby University, Bates College.

Maine Wesleyan Seminary and Female College, Westbrook Seminary, Waterville Classical Institute, Maine Central Institute, Hallowell Classical Institute, and others; Western Normal School; Farmington and Eastern Normal School, Castine.

State collection of agriculture and mechanic arts. (*South Gallery*.) 304

- 25 State of Iowa, Educational Department (by Alonzo Abernethy, Des Moines.).

—Collective exhibit of the public schools of Davenport, Des Moines, Atlantic, Muscatine, Ottumwa, Marengo, Boone, Sigourney, Winterset, Lyons, Indianola, Wheatland, Clarence, Friends' Academy, Le Grand, and Osceola, Mt. Pleasant, Jefferson, West Liberty, Mason City, Wilton, Burlington, Sioux City, Denison, Kellogg, and of Oskaloosa, Amity, and Western Colleges, Iowa. Reports, charts, drawings, and examination manuscripts.

Iowa School Furniture Co.—School desks and seats. (*South Gallery*.) 304

- 25a State of Missouri, Educational Department (by Wm. T. Harris, St. Louis, Mo.).—Volumes of school furniture and photographs of schools. (*South Gallery*.) 304

- 26a State of Maryland Educational Exhibit. (T 38 and *South Gallery*.)

- 26 State of Tennessee Educational Department, collective exhibit.

Trousdale, Leon, State Superintendent of Schools, Nashville, Tenn.—Reports and school banner.

Dean, John R., County Superintendent, Shelbyville, Tenn.—Manuscripts of pupils of the schools, and school banner.

Presnell, H., County Superintendent of Schools, Jonesboro, Tenn.—Photographs of Colored Training School and South Normal School buildings.

Pickett, A., City Superintendent of Schools, Memphis, Tenn.—Examination manuscripts and principles of instruction; geographical drawings.

Caldwell, S. Y., City Superintendent,

## School Statistics, Students' Work.

Nashville, Tenn.—Examination manuscripts, drawings, school banner, and annual reports.

Perkins, W. H., Principal Peabody Graded School, Powell's Station, Tenn.—Examination manuscripts of classes D and C, second grade.

Tennessee Medical Society, Nashville, Tenn.—Transactions of the session 1845.

Lindsley, J. Berrian, Nashville, Tenn.—Life and works of Philip Lindsley.

Giers, C. C., Nashville, Tenn.—Photographs of educators. (*South Gallery.*) 304

# 67 Commonwealth of Massachusetts, Department of Education and Science.

**DRAWING AND MODELING.**—Industrial, mechanical, and free hand, from the public day, evening, and Normal Art School; from the Massachusetts Institute of Technology, the Worcester Free Institute, and Boston Art Academy, nearly one thousand exhibits.

The Massachusetts System of Art Instruction for industrial, free hand, mechanical, and other drawing, designs of various kinds, models, and text books for schools and advanced study in drawing, designing, and modeling. Prepared by Butler Smith, published by L. Prang & Co.; exhibited in twenty-eight text books, one hundred and thirty-eight studies, forty-seven models, and fifty-seven casts.

**PHOTOGRAPHS.**—*Universities, Colleges, and Technical Schools:* Howard University, Bussey Institute, Williams College, Amherst College, Tuft's College, Boston College, College of the Holy Cross, Museum of Comparative Zoology, Massachusetts Institute of Technology, and Worcester Free Institute.

*Women's Colleges:* Mt. Holyoke, Wellesley, and Smith, Clarke's Articulating School for the Deaf.

*Normal Schools:* Bridgewater, Framingham, Westfield, Salem, and Worcester (interiors and exteriors).

*School houses:* Primary, grammar, high, and private schools of Boston, New Bedford, Greenfield, Salem, and other towns.

*Harvard University,* represented by photographs, catalogues, and courses of study.

*Williams College,* by photographs, catalogues, text books, and publications of its presidents and professors.

*Amherst College,* by photographs, catalogues, text books, history, and student life at Amherst.

*Tuft's College,* by photographs, text books, and catalogues; from the scientific department, instruments for the projection of Lissajou's curves, and the opeidoscope, by Prof. Dolbear.

*Boston University,* by year-books.

*Boston College,* by photographs and catalogues.

*College of the Holy Cross:* Photograph and historical sketch.

*Mt. Holyoke Seminary:* Photographs, water colors, catalogues, reports, documents, and history, memoir of Miss Lyon, first principal.

*Wellesley College:* Photographs, water colors, and drawings of buildings and interiors, circulars, pamphlet of history, and sketch.

*Smith's College:* Photographs, water colors, ground and other plans, history, and pamphlets.

*Museum of Comparative Zoology:*

tion of objects, indicated by letter and figure, see Key to Notation, p. 25: ground plan, p. 26.

drawings, illustrated catalogues, bulletins, and reports, bust of Prof. Agassiz, contributions to natural history of the United States.

*Massachusetts Institute of Technology:* Photographs, documents, and students' works, as follows: drawings and original designs in civil and mechanical engineering and architecture; physical, metallurgical, mining, and surveying apparatus; results of physical experiments; models of engineering structures; silver and lead extracted from the ore; tablet of the metric system; theses by graduates in civil, mechanical, and mining engineering, architecture, chemistry, metallurgy, natural history, physics, science, and literature and philosophy; designs for various textile fabrics, oil-cloths, porcelain decorations, etc., by students of the Lowell Free Course of Practical Design.

*Worcester Free Institute:* Drawings and photographs, plan of study and discipline, students' work exhibited in examination papers, drawings, designs, physical apparatus and models.

*Theological Seminary, Andover:* Memorial catalogues, etc.

*Theological Institution, Newton:* Photographs, catalogues, etc.

*Clarke's Institution for the Deaf, Northampton:* Photographs, history, and system of teaching by articulation and lip-reading, annual reports; system of visible speech, by A. Graham Bell.

*Perkins's Institution for the Blind:* Specimens of books printed at the asylum; work of pupils; Dr. Howe's reports.

*Nathaniel Bowditch:* Bust and works.

*Horace Mann:* Portrait, life, lectures, and reports.

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Complete set of annual school reports for 1875, from eighteen cities and three hundred and twenty-four towns, in twelve volumes.

**ANNUAL STATE REPORTS FOR 1875.**—Board of Education, Board of State Charities, Board of Health, Bureau of Labor Statistics, Registration of Births and Deaths, State Librarian, Board of Agriculture, Treasurer, Adjutant-General, Auditor, Annual Returns of Corporations, Trustees of the Perkins Institution for the Blind, Trustees of the School for Idiotic and Feeble-Minded Children, Commission-

## Educational Publications, Statistics, Apparatus.

ers of Railroads, Commissioners of Harbors, Commissioners of Insurance, Commissioners of Taxes, Commissioners of Savings Banks, Commissioners of State Prison, Inspectors of State Prison, Inspectors of State Workhouse, Bridgewater; Inspectors of State Almshouse, Tewksbury; Inspectors of State Primary School, Mouser; Inspectors of State Gas; Trustees Industrial School for Girls; Trustees State Reform School, Westboro'; Trustees Lunatic Asylum, Taunton; Trustees Lunatic Asylum, Northampton; Trustees Lunatic Asylum, Worcester; Trustees Lunatic Asylum, Danvers; Census of the State for 1865; Acts and Resolves for 1875; Public Documents, 1862 to 1874; Plymouth Colony and Massachusetts Bay Records; Decisions of Supreme Judicial Courts; Directories, city and county, from Sampson, Davenport & Co., Greenough & Co., D. Dudley & Briggs; Publications and Text books, from Brewer & Tileston, G. & C. Merriam, Thompson, Brown & Co., Schoenhof & Moeller, R. S. Davis & Co., W. F. Draper, Grim Bros., Oliver Ditson.

*Publications of Societies:* Natural History, Numismatic, Historic, Genealogical, Medical Improvement.

Reports of associations, organizations, towns, public libraries, etc.; Psyche Advertiser of Entomology.

*Periodical Literature:* A copy of every newspaper and periodical published in Massachusetts in 1876, bound in eleven volumes; New England Journal of Education for 1875 and 1876.

*American Academy of Arts and Sciences:* Proceedings, memoirs, and other works, thirty-four volumes.

*Essex Institute:* Full set of works; American Naturalist, nine volumes.

*Peabody Academy of Science:* Two volumes; complete set of Asa Gray's works; scientific, educational, and miscellaneous publications by Massachusetts authors; photographs and autographs of some of the living authors of Massachusetts; a series of astronomical drawings (thirty-four), from the physical observations of L. Trouvelot; Cambridge pastel drawings, from actual telescopic observations requiring ten years for their preparation, representing most interesting objects in astronomy, as comets, clusters, nebulae, meteors, solar spots and protuberances, eclipses, moon craters, planets, zodiacal light, aurora borealis, etc.

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Temperance Alliance; New England Hospital for Women and Children; Temporary Home for Discharged Female Prisoners; Home for Little Wanderers; School for Pauper Boys; Industrial School for Girls, Dorchester; Washingtonian Home.

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*Architectural Illustrations of Insane Asylums at Danvers, Worcester, and Northampton; New England Hospital for Women and Children, in Boston; Washingtonian Home, at Boston; Reformatory Prison for Women, at Sherborn; School for Neglected Children, at Deer Island (private); Institution for Feeble Minded Youth, at Barre; Warren Street Chapel, Boston; Abattoir, at Brighton.*

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Photographs of specimens from Brown High School, Newburyport. (*East Gallery.*)

**27a State of Minnesota, Educational Department.**—Bound volumes of examination papers, maps, drawings, etc., from the public schools of St. Paul, L. M. Burlington, Superintendent of Public Schools; bound volumes of examination papers, maps, drawings, etc., from the public

## Students' Work, Educational and General Publications.

- schools of Minneapolis and Winona, O. V. Tousley, Superintendent; designs and plans for school buildings, exhibited by A. Langdon, Winona. (*South Gallery*). 304
- 28 State of New Jersey, Department of Public Instruction (by Ellis A. Apgar, Trenton, N. J.).—Work by school children, viz.: maps drawn from memory; mathematical operations; analysis and parsing; compositions; spelling; primary and miscellaneous work; artistic drawing in crayon, indian ink, and lead pencil; mineral and natural history collections; mechanical contrivances; photographic views, exterior and interior of school-houses, and decennial exhibit of their improvements, showing condition in 1866 and 1876; kindergarten work; penmanship; history of schools in New Jersey: works written by alumni of Princeton and Rutgers Colleges, and photographic views of the same. (*South Gallery*). 304
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- 29a Peirce's Union Business College.—Exhibit noticed under special buildings. (*Pennsylvania Educational Hall*). 304
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- 31 Lippincott, J. B., & Co., Philadelphia, Pa.—Selected publications printed and bound in their establishment. T 72. 306
- 31a Lockwood, George R., New York, N. Y.—Audubon's Birds of America and Birds and Quadrupeds of America. T 75. 306
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- 33 Davis, Chas. H., & Co., Philadelphia, Pa.—Zell's Encyclopedia, Hand Atlas, Cyclopaedia of American Literature, and United States Business Directory; Centennial map of one hundred and thirty-six miles around Philadelphia. A specimen of Zell's Encyclopedia with map will be sent to any address on receipt of twenty cents. T 73 to 78. 306
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- 80 Osgood, James R., & Co., Boston, Mass.—Books. T 73 to 78. 306
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- 84 American News Co., New York, N. Y.—American Bookseller's Guide and American Bookseller. T 75. 306
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- 86 Dick & Fitzgerald, New York, N. Y.—Dick's Encyclopedia, books of popular information, etc. T 77. 306
- 87 The Centennial Guide Book Co. (limited), Philadelphia, Pa.—Visitors' Guide to the Centennial Exhibition and Philadelphia. H 72 and N 5. 306
- 88 American Baptist Publication Society, Philadelphia, Pa.—Books and periodicals. T 76. 306
- 89 Allen, Lane & Scott & Jas. W. Lauderbach, publishers, Philadelphia, Pa.—An elegant illustrated quarto, entitled "A Century After;" picturesque glimpses of Philadelphia and Pennsylvania, including Fairmount, the Wissahickon, the cities and landscapes of the State, and the Centennial Buildings. T 73 to 78. 306
- 90 Gill, Wm. F., & Co., Boston, Mass.—Monument device of books, in the form of Bunker Hill monument. T 74. 306
- 91<sup>g</sup> Fireland Historical Society, Norwalk, O.—Stone and flint implements and ornaments, pottery, etc. V 63. 312
- 91<sup>k</sup> Agricultural College of Ohio, Columbus, O.—Copper and stone implements, etc. V 63. 312
- 91<sup>i</sup> Archaeological Society of Ohio, Columbus, O.—Map showing the location of ancient earthworks in the State. V 63. 312
- 91<sup>j</sup> Western Reserve College, Hudson, O.—Copper implements, stone pipes, hammers, etc. V 63. 312
- 91<sup>k</sup> Force, W. F., Cincinnati, O.—Copper implements of the mound builders. V 63. 312
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- 94h Clum, H. A., Elmira, New York, N. Y.—Aëliograph or storm writer for pre-determining storms. N 60. 320
- 94i Leete, Isaac P., Branford, Conn.—Atomizer and vaporizer. N 70. 320
- 100 Muller's Sons, Nicholas, New York, N. Y.—Thermometers. P 76. 320
- 101 Benjamin, E. B., New York, N. Y.—Chemical glass and porcelain wares; rare chemical and assaying implements; tools for blowpiping; students' sets; Geissler tubes and physical apparatus. N 57. 320
- 103 Gurley, W. & L. E., Troy, N. Y.—Civil engineers', land surveyors', and mining engineers' instruments and apparatus. N 56. 320
- 104 Lowe, N. M., Boston, Mass.—Terrestrial orrery, graphic hygrometer. N 55. 320
- 105 Prentice, James, New York, N. Y.—Engineers' and surveyors' instruments. N 58. 320
- 106 Heller & Brightley, Philadelphia, Pa.—Surveying, engineering, mathematical, optical, and astronomical instruments. N 59. 320
- 107 Alteneder, Theodore, Philadelphia, Pa.—Joint draughting instruments, protractors, triangles, and drawing scales. N 58. 320
- 108 Fauth, C., & Co., Washington, D. C.—Astronomic, geodetic, and scientific instruments; equatorial-universal alt-azimuth, theodolites, levels, etc. N 57. 320
- 109 Tarr, Henry S., & Son, Philadelphia, Pa.—Dry level; plumb and level combined. N 57. 320
- 110 Bahmann Bros., New York, N. Y.—Hydrometers, thermometers, and chemical glass instruments. N 58. 320
- 111 Schlatterbeck, A. S., Portland, Me.—Thermometer. N 58. 320
- 112 Tagliabue, Giuseppe, New York, N. Y.—Recording barometer, thermometer, and rain gauge; pyrometers, milk tester, hydrometers. N 58. 320
- 113 Kroedel, Franz, New York, N. Y.—Chorometer for surveying. (*West Gallery*.) N 57. 320
- 114 Knox & Shain, Philadelphia, Pa.—N 57. 320
- a Engineering instruments. 320
- b Telegraph instruments. 326
- 115 Young's, Wm. J., Sons, Philadelphia, Pa.—N 59. 320
- a Astronomical circle, equatorial sextant, transits. 320
- b Telescopes. 324
- 116 Riggs & Bro., Philadelphia, Pa.—N 58. 320
- a Ships' binnacles and logs. 320
- b Watchmen's clocks, balance springs for chronometers and watches. 323
- 117 Queen, Jas. W., & Co., Philadelphia, Pa.—N 55. 320
- a Mathematical and drawing instruments and accessories for students and professional men. 320
- b Microscopes. 324

## Scientific and Philosophical Instruments.

- 118 Bliss, John, & Co., 110 Wall street, New York, N. Y.—N 52.
- a Ships' logs, register fastened to taffrail; rotator attached and towed astern. 320
- b Marine chronometers, entirely American manufacture, with auxiliary compensation; watchmakers' portable transit instruments, for obtaining correct time. 323
- tern. 320
- 119 Deakin, Robt. T., Philadelphia, Pa.—N 58.
- a Philosophical instruments, mandrel-drawn tubes. 320
- b Green-house syringes; portable fire engine and garden pump. 720
- 120 Watts & Co., Baltimore, Md.—N 61.
- a Scientific apparatus. 320
- b Electrical apparatus. 325
- c Telegraphic apparatus. 326
- 121 Stewart, A., Philadelphia, Pa.—Fare controller and indicator; mechanical instruments. N 56. 321
- 121a Pottin Register Manufacturing Co., Philadelphia, Pa.—Registers for cars, ferries, billiards, and money drawers. P 57. 321
- 122 Darling, Brown, & Sharpe, Providence, R. I.—Rules, try squares, wire gauges, and tools for accurate measurements. P 70. 322
- 123 Eddy, Geo. M., & Co., Brooklyn, N. Y.—Measuring tapes of cotton, linen, and steel. N 57. 322
- 124 Mains Manufacturing Co., New York, N. Y.—Petroleum tester. N 65. 322
- 125 Weaver, Henry M., Mansfield, O.—Automatic balance scales. N 56. 322
- 126 Juvet, L. P., Glen's Falls, N. Y.—Time globe. N 55. 323
- 127 Tiffany & Co., New York, N. Y.—Watches. N 41. 323
- 127a Hietel Bros., Philadelphia, Pa.—Spring lever for watch escapement. N 58. 323
- 128 Elgin National Watch Co., Elgin, Ill.—Watch movements and materials. P 67. 323
- 128a Galena Oil Works (limited), Franklin, Pa.—Oil well clock. P 47. 323
- 129 Seth Thomas Clock Co., Thomaston, Conn.—Clocks. N 65. 323
- 130 Hagstoz & Thorpe, Philadelphia, Pa.—Suffened gold watch cases. P 43. 323
- 131 American Watch Co., Waltham, Mass.—Watches and watch movements, gold and silver watch cases, watch materials. P 67. 323
- 132 Mehr, Geo., 1218 Hutchinson street, Philadelphia, Pa.—Patent sun dials made of marble, showing time of day, and distance of nineteen cities from Philadelphia (*Outside*). 323
- 134 Ithaca Calendar Clock Co., Ithaca, N. Y.—Perpetual calendar clock. N 66. 323
- 135 Teske, Charles, Saratoga Springs, N. Y.—Watch regulator. N 56. 323
- 136 Ansonia Brass & Copper Co., Ansonia, Conn.—Brass and nickel movement clocks. N 57. 323
- 137 Spellier, Louis H., Doylestown, Pa.—Regulator, with new mode of hanging the pendulum, and anchor pin escapement. N 55. 323
- 138 Empire City Watch Co., Jersey City, N. J.—Watches, watch movements, and watch materials. N 55. 323
- 139 Fasoldt, Charles, Albany, N. Y.—Astronomical tower clock. N 56. 323
- 140 Elson, Julius, Boston, Mass.—Safety attachments and regulators for watches. N 56. 323
- 141 Lapp, Ferd., Detroit, Mich.—Carved black walnut clock case. N 56. 323
- 142 Fortenbach & Sons, Carlstadt, N. J.—Silver watch cases. N 55. 323
- 143 Paulus, E., Philadelphia, Pa.—Watches and clocks. N 55. 323
- 144 Hummel, Alois, Baltimore, Md.—Musical clock. N 66. 323
- 145 Robbins, Clark & Biddle, Philadelphia, Pa.—Watches, clocks. N 43. 323
- 146 Gropengiesser, Jno. L., Philadelphia, Pa.—Astronomical clock. N 56. 323
- 148 E. N. Welch Manufacturing Co., Forestville, Conn.—Clocks. N 65. 323
- 149 New Haven Clock Co., New Haven, Conn.—Clocks. N 65. 323
- 150 Imhauser & Co., New York, N. Y.—Watchman's time detector. This watch clock, which is fastened at the watchman's belt, is supplied with twelve keys. In making his rounds, the watchman inserts the keys in the watch, which will perfectly show his movements. N 58. 323
- 151 Bacon, B. H., Philadelphia, Pa.—Lunar clock. N 56. 323
- 152 Mitchell, Van-ee, & Co., New York, N. Y.—Clocks. N 49. 323
- 153 Pequignot, C. & A., Philadelphia, Pa.—Watches and watch cases. N 63. 323
- 154 Hahl, A., & Co., Baltimore, Md.—Electric clocks, bells, indicators, burglar alarms, tower clocks. N 63. 323
- 155 Wheeler, Marshall, Big Rapids, Mich.—Solar chronometer. N 52. 323
- 156 Schenck, John H., New York, N. Y.—Illuminated clock, "phantasmagoria." N 66. 323
- 157 Hill, J. W., Waterville, Kansas.—Clock that will run 100 years without winding, with a new escapement. With this escapement clocks can be made that will run the longest time, and with least machinery, and be perfectly accurate. (*Kansas Building*.) 323
- 158 Wilson, T. A., & Co., Reading, Pa.—Steel spectacle and eyeglass frames; lenses for optical purposes. N 58. 324
- 158a Black, L., & Co., Detroit, Mich.—Spectacles and eye glasses. N 64. 324
- 159 Zentmayer, Joseph, Philadelphia, Pa.—Microscopes and accessories. N 58. 324
- 159a Beatty, George D., Baltimore, Md.—Microscopical slides, showing vegetable tissue. T 50. 324
- 160 Bausch & Lomb Optical Co., Rochester, N. Y.—Optical instruments, lenses, etc. N 55. 324
- 161 Wales, W., Fort Lee, N. J.—Microscope object glasses, with back for photographing; photomicrographs. N 58. 324

cation of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.



## Scientific and Philosophical Instruments.

- 162 Weiskopf, E., New York, N. Y.—Lenses for solar printing, lenses for magic lanterns, lenses and laryngoscopes and ophthalmoscopes; mirrors for eye, ear, and throat; instruments for dentists, and microscopes. N 57. 324
- 163 Spencer Optical Manufacturing Co., New York, N. Y.—Optical lenses, spectacles, and eyeglasses. N 59. 324
- 164 Edgerton, N. H., Philadelphia, Pa.—Philosophical instruments, stereopticons and slides; self-condensing gas cylinders. N 58. 324
- 165 Diamond, J., Pittsburg, Pa.—Spectacles and eyeglasses; Russian pebbles. N 56. 324
- 165a Miller Bros., New York, N. Y.—Microscope and specimens. P 47. 324
- 166 Walmsley, W. H., Philadelphia, Pa.—Microscopic preparations. N 55. 324
- 167 American Optical Co., Southbridge, Mass.—Spectacles and eyeglasses. N 57. 324
- 168 Yale Lock Manufacturing Co., Stamford, Conn.—Anodes for nickel-plating. P 72. 325
- 168a Pulvermacher Galvanic Co., Cincinnati, O.—Electro-galvanic appliances, etc., for medical purposes. N 55. 325
- 169 Bryan, Jas. C., Philadelphia, Pa.—Magnetic and magneto-electrical lighting rods. N 63. 325
- 169a Gardiner, Samuel, Washington, D. C.—Electrical gas lighting apparatus. T 64. 325
- 170 Reyburn, Hunter, & Co., Philadelphia, Pa.—Lightning rods, points, and fixtures. N 62. 325
- 170a Garratt, Alfred, Boston, Mass.—Electric disc. N 55. 325
- 171 Kidder, Jerome, New York, N. Y.—Electro-medical apparatus. A gold medal of progress was awarded to Dr. Kidder at the fair of the American Institute, in the fall of 1875, for the "best electro-magnetic machine." For illustrated catalogue, address Dr. Jerome Kidder, northeast corner of 17th street and 4th avenue, New York. N 56. 325
- 172 Patrick & Carter, Philadelphia, Pa.—Telegraph sounders, learners' apparatus, hotel annunciators, Philadelphia relay, electric bells, and burglar alarms. N 64. 325
- 173 Fleming & Talbot, Philadelphia, Pa.—Electrical instruments and batteries for physicians and surgeons. N 63. 325
- 174 Cornish, Thos. E., Philadelphia, Pa.—Electric burglar alarm, annunciators, bell calls, clocks, batteries, gongs, wire, etc. N 64. 325
- 177 Munson, David, Indianapolis, Ind.—Lightning rods. N 59. 325
- 178 Western Electric Manufacturing Co., Chicago, Ill.—Electrical apparatus, electro-physical, medical, and harmonic instruments, annunciators, railway signals, etc. N 60. 325
- 19 Lafin & Rand Powder Co., New York, N. Y.—Electrical blasting apparatus. H. Julius Smith's patents. Novel and perfect adaptation. N 62. 325
- 1 Brittain, R. J., Hedenberg Works, Newark, N. J.—Electro-medical instruments. N 65. 325
- 181 Paoli Belt Co., New York, N. Y.—Electro-voltaic chain belt. N 61. 325
- 181a Buckman, Ira, Brooklyn, N. Y.—Annunciators. N 68. 325
- 182 Galvano-Faradic Manufacturing Co., New York, N. Y.—Electrical instruments for medicinal use. N 57. 325
- 183 Launert & Decker, Cleveland, O.—N 60. 325
- a Indicating annunciators and burglar alarm. 325
- b Alphabetical telegraph instruments. 326
- 183a Finger, Hare, & Co., Boston, Mass.—Electro-magnetic annunciator. N 78. 325
- 184 McCormick, James, Philadelphia, Pa.—Burglar alarm and door fastener. H 72. 325
- 185 National Fire Alarm Telegraph Co., Richmond, Ind.—System of fire alarm and police telegraph. N 65. 326
- 186 Holmes Burglar Alarm Telegraph Co., New York, N. Y.—Bank vault and safe protector, burglar alarm telegraph, electric hotel and house annunciator, electrical bells. N 64. 326
- 187 Brooks, David, Philadelphia, Pa.—Underground cables for telegraph lines. (Nave.) 326
- 188 Edison, Thos. A., Newark, N. J.—Roman letter, etheric, domestic, automatic, and quadruplex telegraph; electromograph, doubler, and electric pen. N 63. 326
- 188a Cleveland Lightning Rod Co., Garrettsville, O.—Lightning rods, vanes, and ornaments. (Ohio Building.) 326
- 189 Dowden, Geo. A., Newark, N. J.—Burglar alarm and automatic annunciator. N 65. 326
- 189a American District Telegraph Co., Philadelphia, Pa.—Telegraph signal boxes. (Nave.) 326
- 190 Henry, D. F., Chief Engineer Water Works, Detroit, Mich.—Model of subaqueous tunnel; telegraphic current meter; flexible jointed water pipe. P 65. 326
- 190a Gamewell, John N., New York, N. Y.—Fire alarm telegraph signal boxes. (Nave.) 326
- 191 Rice, Jas. D., Philadelphia, Pa.—Lightning rods and points. N 66. 326
- 191a Gray & Barton Western Electric Telegraph Co., Chicago, Ill.—Printing telegraph instrument. (Nave.) 326
- 192 Atlantic & Pacific Telegraph Co., Philadelphia, Pa.—Automatic and duplex telegraphic apparatus. (Nave.) 326
- 193 Phillips, Eugene F., Providence, R. I.—Patent flexible gas-tight tubing; patent insulated telegraph wires. N 51. 326
- 193a Philips, W. J., Philadelphia, Pa.—Printing telegraph instruments. (Nave.) 326
- 194 Vigneron, Charles, Providence, R. I.—Piano insulator. N 58. 326
- 194a Lockwood, Brooks, & Co., Boston, Mass.—Computing telegraph. P 47. 326
- 195 Welch & Andres, Boston, Mass.—Magneto-printing and dial telegraph instruments; watchman's time recorder. N 61. 326

## Scientific, Philosophical, Musical Instruments.

- 195<sup>a</sup> Gray, Eliza, Chicago, Ill.—Electro-harmonic telegraph. (*Nave.*) 326
- 196 Watkins, Wm. B., New York, N. Y.—Automatic fire and burglar telegraph and fire extinguisher; electric thermostats, fire signal boxes, duplex telegraph. N 59. 326
- 196<sup>a</sup> Bell, A. Graham, Boston, Mass.—Electro-harmonic telegraph. N 64. 326
- 197 Western Union Telegraph Co., New York, N. Y.—Telegraphic apparatus. N 63. 326
- 197<sup>a</sup> Frost & Hanline, Philadelphia, Pa.—Automatic thermostat for fire alarm telegraph. (*Nave.*) 326
- 198 Day, Austin G., office, 120 Broadway, New York, N. Y.—Kerite insulated telegraph wire and cables; Kerite battery cups; electrical battery. Manufacturer of Kerite insulated telegraph wire and cables. Do not require protection from long exposure in hot climates in the air, earth, or water, or from the corrosive action of acids, alkalies, oils, or gases. Can be kept on storage for a long term of years without deterioration. N 63. 326
- 199 White, Samuel S., Philadelphia, Pa.—Electro-harmonic telegraph. N 65. 326
- 200 Coston, Wm. F., Philadelphia, Pa.—Application of Coston night signal to the International and N. Y. Yacht Club codes. H 68. 326
- 201 Colton, Martha J., Philadelphia, Pa.—Telegraphic night signal for use on land and sea. H 68. 326
- 202 Hale, B. S., & Co., Lawrence, Mass.—Electric wire. N 75. 326
- 203 Otto, John William, St. Louis, Mo.—Piano. P 60. 327
- 203<sup>a</sup> Siebenhüner, Anton, New York, N. Y.—Violins and bows. P 64. 327
- 204 Pfaff, John, Philadelphia, Pa.—Clarinets, ivory flute, tail piece for violin, tuning pipe. P 66. 327
- 204<sup>a</sup> Greiner, Geo., Philadelphia, Pa.—Piano. N 64. 327
- 205 Martin, C. F., & Co., Nazareth, Pa.—Guitars. P 59. 327
- 206 Pratt, Read, & Co., Deep River, Conn.—Ivory combs, piano forte and organ keys, ivory veneers, and other ivory goods. P 62. 327
- 206<sup>a</sup> Monroe Organ Reed Co., Worcester, Mass.—Organ reeds and organ material. P 59. 327
- 207 Burdett Organ Co., Erie, Pa.—Burdett organs. P 64. 327
- 207<sup>a</sup> Boulanger, Louis, St. Louis, Mo.—Violin. T 60. 327
- 208 Meyer, Conrad, & Sons, Philadelphia, Pa.—Square piano fortes, original iron-plate frame piano, Conrad Meyer inventor, 1833. P 65. 327
- 209 Schomacker Piano Co., Philadelphia, Pa.—Square and concert grand, square, and upright pianos. N 67. 327
- 210 Hallet, Davis, & Co., Boston, Mass.—Orchestral, concert, and parlor grand, upright, and square grand pianos. N 61. 327
- 211 Miller, Henry F., Boston, Mass.—Piano fortes. N 65. 327
- 212 Zimmermann, C. F., Philadelphia, Pa.—Musical instruments. N 63. 327
- 213 Albert, Chas. F., Philadelphia, Pa.—String quartet, violins, chin and cello rests, wrapped strings, guitars, a Stradivarius and a Guarnerius violin. P 62. 327
- 214 Mason & Hamlin Organ Co., Boston, Mass.—Cabinet organs. P 66. 327
- 215 Albert, John, Philadelphia, Pa.—String quintet, violins made by Albert's machine. P 62. 327
- 216 Seefeldt, Wm. F., Philadelphia, Pa.—Brass and German silver musical instruments. P 59. 327
- 217 Ingalls, W. G., & Co., Worcester, Mass.—Reeds, reed boards, and valves for organs. P 58. 327
- 218 Estey, J., & Co., Brattleboro', Vt.—Organs. Call special attention to,—1st, elegance and solidity of their structure; 2d, durability of manufacture throughout; 3d, richness, sweetness, and pipe-like quality of tone; 4th, number of organs manufactured and sold; 5th, reputation throughout the world, highest endorsement by such artists as Rubinstein, Wilhelmj, Abt, Lucca, Joachim, Freyer, Kucken, Czerny, Ole Bull, Saint-Saëns, Tinel, and many others. P 63. 327
- 219 Dolge, Alfred, New York, N. Y.—Piano forte and polishing felts; spruce sounding-board material. P 66. 327
- 220 Faas, Anthony, Philadelphia, Pa.—Pianos. P 64. 327
- 221 Waters, Horace, & Sons, New York, N. Y.—Organs. P 64. 327
- 222 Roosevelt, H. F., New York, N. Y.—Organs, hydraulic engines, and other blowing apparatus. (*North gallery.*) 327
- 223 Calender, Vaupel, & Co., New York, N. Y.—Piano fortes. P 64. 327
- 224 Hazleton Bros., New York, N. Y.—Grand, cabinet grand, upright, and square pianos. N 64. 327
- 224<sup>a</sup> Eisel, M., St. Louis, Mo.—Piano movement. V 60. 327
- 225 Albrecht & Co., 610 Arch street, Philadelphia, Pa. (Charles Albrecht, Frederick Riekes, Edmund Wolsieffer)—Piano manufacturers of first-class, grand, square, and upright pianos. Prices low, for cash, and five years' guarantee. P 68. 327
- 225<sup>a</sup> Hamlin, Emmons, Boston, Mass.—Violins. T 66. 327
- 226 Woods, Geo., & Co., Cambridgeport, Mass.—Organs. P 61. 327
- 227 Gemunder, Geo., Astoria, N. Y.—Stradivarius quartet, one Stradivarius, and one Guarnerius violin. P 59. 327
- 228 Dürner, Chas. F., Quakertown, Pa.—Church organ. P 61. 327
- 229 Shoninger, B., Organ Co., New Haven, Conn.—Reed organs. Manufacturers of reed organs for churches and families, with all improvements, embracing a stool, a chime of bells, which make the instrument very complete. N 68. 327
- 230 Steinway & Sons, New York, N. Y.—Grand, upright, and square piano fortes. P 66. 327
- 231 Decker Bros., New York, N. Y.—Concert and parlor grand, upright, and square piano fortes. P 67. 327

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Musical Instruments.

- 232 Lehnert, Henry G., Philadelphia, Pa.**—Improved brass instruments, for bands and orchestras. P 64. 327  
**233 Goldsmith, Jonas G., New York, N. Y.**—Square piano forte. P 64. 327  
**234 Bacon & Karr, New York, N. Y.**—Square and upright pianos. P 62. 327  
**235 Neff, James, Philadelphia, Pa.**—Quartette of musical stringed instruments. P 64. 327  
**236 United Piano Makers, Brooklyn, N. Y.**—Grand, upright, and square pianos. P 64. 327  
**237 Hoeppe, C. J., Philadelphia, Pa.**—Grand, square, and upright pianos, and parlor organs. P 64. 327  
**238 Manhattan Piano Forte Co., New York, N. Y.**—Piano fortes. This company, composed of practical mechanics, was established 1863. Their pianos are admired by every one for their sweet and powerful tone, as well as the pleasing touch they possess. P 63. 327  
**239 Emerson Piano Co., Boston, Mass.**—Upright and square pianos. P 63. 327  
**240 Oldendorf, Henry, New York, N. Y.**—Bass and snare drums. P 59. 327  
**241 Quaker City Organ Co., Philadelphia, Pa.**—Cabinet organs. P 63. 327  
**242 Newman, Edward G., New York, N. Y.**—Square grand pianos. N 63. 327  
**243 Peloubet, Pelton, & Co., New York, N. Y.**—Reed organs. The standard organs here shown are exhibited as specimens of the daily work of the manufacturers. P 65. 327  
**244 Ivers, W. H., Dedham, Mass.**—Piano. P 65. 327  
**245 Jennison, Wm. A., Camden, Miss.**—Violin. P 62. 327  
**246 Nicholls, Reuben, Philadelphia, Pa.**—Church organ, with pneumatic action. Composition, balance swell, crescendo and diminuendo pedals, never before introduced. P 66. 327  
**246 Lehnert, Carl, Boston, Mass.**—Cymbals and gongs, Turkish and Chinese combination of metals. P 62. 327  
**247 Ohio Valley Piano Co., Ripley, Ohio.**—Pianos. P 63. 327  
**248 Cummins, Henry, New York, N. Y.**—Violin. P 62. 327  
**249 Robbins & Appleton, New York, N. Y.**—Gold and silver watch cases. P 67. 327  
**251 Hinds & Sons, Newark, N. J.**—Piano fortes. N 63. 327  
**252 Wing, F. L., & Hill, F. M., New York, N. Y.**—Dolce piano forte, without strings: organ. T 59. 327  
**253 McFadden, George, Syracuse, N. Y.**—Cornets and trombones. P 63. 327  
**254 Moeller, A., Hartford, Conn.**—Upright piano. P 63. 327  
**255 Simpson & Co., New York, N. Y.**—Square and upright piano fortes. P 64. 327  
**256 Gemunder, August, New York, N. Y.**—Four-stringed double bass. P 59. 327  
**257 Sohmer & Co., New York, N. Y.**—Upright and square piano fortes. P 62. 327  
**258 McDonald, Jas., Williamsport, Pa.**—Square grand piano fortes. P 63. 327  
**259 Dobson, Mrs. Louisa, New York, N. Y.**—Banjo. P 65. 327  
**260 Haines Bros., New York, N. Y.**—Grand, square, and upright piano fortes. P 62. 327  
**261 Steck, George, & Co., New York, N. Y.**—Grand, square, and upright pianos. N 60. 327  
**262 Hardman, Hugh, New York, N. Y.**—Grand, square, and upright piano fortes. N 62. 327  
**263 Weber, Albert, New York, N. Y.**—Concert and parlor grand, upright, and square pianos. N 66. 327  
**264 Wildman, L. P., Danbury, Conn.**—Violins. P 59. 327  
**265 United States Piano Co., New York, N. Y.**—Piano forte. P 62. 327  
**266 Knabe, Wm., & Co., Baltimore, Md.**—Grand, square, and upright pianos: a harpsichord made by Tschudi & Broadwood for Chas. Carroll of Carrollton. P 60. 327  
**267 Berry, James B., Boston, Mass.**—Square and grand piano fortes. P 62. 327  
**268 Stieff, Chas. M., Baltimore, Md.**—Grand, square, and upright pianos. N 64. 327  
**269 New Haven Organ Co., New Haven, Conn.**—Organs. P 64. 327  
**270 Hook, E. & G. G., & Hastings, Boston, Mass.**—Grand concert, chapel, and church organs. (*East Gallery.*) 327  
**271 Knauff, Theodore O., Philadelphia, Pa.**—Mechanical and pipe organs. (*Outside.*) 327  
**272 Hinzen & Rosen, Louisville, Ky.**—Piano. P 64. 327  
**273 Wessell, Nickel & Gross, New York, N. Y.**—Piano. P 64. 327  
**274 Perry, J. R., Wilkesbarre, Pa.**—Organs; testing and tuning box for reed organs. P 64. 327  
**275 Rogers Upright Piano Co., Boston, Mass.**—Upright pianos. The mechanical principles employed secure claims for this instrument of the greatest utility and practical importance to musicians and amateurs. P 65. 327  
**276 Perrot, Auguste, Philadelphia, Pa.**—Tonognome, a portable melodeon. P 59. 327  
**277 Watson, J. Jay, New York, N. Y.**—Violin and violin strings. P 59. 327  
**278 Chickering & Sons, Boston, Mass.**—Piano fortes. P 61. 327  
**279 Wellenberger, Jos., & Ganter, New York, N. Y.**—Orchestrion or self-acting organ. P 65. 327  
**280 Mortimer, John R., New York, N. Y.**—Pneumatic exhaust palate for organs. P 63. 327  
**281 Behning & Diehl, New York, N. Y.**—Grand square pianos. N 63. 327  
**282 Benham Organ Co., Indianapolis, Ind.**—Cabinet organs. T 62. 327

## Musical Instruments, Engineering Designs.

- 283 Mathushek Piano Manufacturing Co., New Haven, Conn.—Pianos. P 59. 327
- 284 Smith, B. N., & Co., New York, N. Y.—Carved piano legs and lyres. P 59. 327
- 285 Secor, Jerome B., Bridgeport, Conn.—Automaton singing birds in cages and vases. T 48. 327
- 286 Kranich & Bach, New York, N. Y.—Grand, upright, and square piano fortes. N 63. 327
- 287 Clough & Warren Organ Co., Detroit, Mich.—Parlor organ. P 63. 327
- 288 Missenharter, Chas., New York, N. Y.—Excelsior musical instruments. P 64. 327
- 289 Kompff, Ph., New York, N. Y.—Military drums, banjos, and tambourines. P 62. 327
- 290 Lighte & Ernst, New York, N. Y.—Grand square piano fortes. P 65. 327
- 291 Willis, Aug. L., Philadelphia, Pa.—Octave coupler for piano fortes. H 71. 327
- 292 Browne & Buskewell, New York, N. Y.—Grand concert double action harp and music desk. P 63. 327
- 293 Conn & Dupont, Elkhart, Ind.—Musical instruments for bands; improved mouthpieces for band instruments. P 61. 327
- 294 Boston Musical Instrument Manufactory, Boston, Mass.—Brass band musical instruments. P 64. 327
- 295 Schindler, C. A., New York, N. Y.—Piano stools. P 63. 327
- 296 Taylor & Farley Organ Co., Worcester, Mass.—Cabinet and church reed organs. P 58. 327
- Engineering, Architecture, Charts, Maps, and Graphic Representations.**
- 297 Lowthorp, Francis C., Trenton, N. J.—Photographs of iron bridges erected, plans of wrought iron bridge and turn tables. T 67. 330
- 297a Barnum, Richardson, & Co., Lime Rock, Conn.—Drawings relating to various works. (*West Gallery.*) 330
- 298 American Bridge Co., Chicago, Ill.—Model of rigid suspension bridge, details of construction, photographs and drawings. T 67. 330
- 298a Carroll, Francis, New Orleans, La.—Model of automatic damper for gas furnaces. (*West Gallery.*) 330
- 299 Clarke, Reeves, & Co., Phoenixville Bridge Works, Philadelphia, Pa.—Photographs and models of bridges, viaducts, and other iron structures actually executed. (*West Gallery.*) 330
- 299a Philadelphia & Reading R.R. Co., Philadelphia, Pa.—Bridge models, etc. V 53. 330
- 300 Pettit, Henry, & Wilson, Jos. M., Engineers and Architects, Philadelphia, Pa.—The Main Exhibition building, Machinery Hall and adjacent boiler houses for the International Exhibition, 1876. (*In Park.*) 330
- 300a Thomas Iron Co., Hokendauqua, Pa.—Drawings relating to iron works. (*West Gallery.*) 330
- 301 King Iron Bridge & Manufacturing Co., Cleveland, O.—Wrought iron highway bridge between Horticultural Hall and Art Gallery. 330
- 301a North Chicago Rolling Mill Co., Chicago, Ill.—Drawings relating to various works. (*West Gallery.*) 330
- 302 Pearsons, G. W., Ogdensburg, N. Y.—Model of standpipe and turbine wheel. (*West Gallery.*) 330
- 303 Pettit, Henry, Philadelphia, Pa.—Bridges and bridge construction. (*West Gallery.*) 330
- 304 Wilson, Jos. M., Philadelphia, Pa.—Bridge and bridge construction. (*West Gallery.*) 330
- 305 Centennial Commission of the American Society of Civil Engineers of the United States.—Papers, drawings, photographs, and models of engineering in America. (*West Gallery.*) 330
- 306 Chanute, Octave, New York, N. Y.—Engineering exhibits relating to bridges and bridge construction. (*West Gallery.*) 330
- 306a Morrison, E. H., Boonton, N. J.—Model and drawings relating to various works. (*West Gallery.*) 330
- 307 Croes, J. James R., Yonkers, N. Y.—Engineering exhibits relating to water works. (*West Gallery.*) 330
- 307a Morris, R. C., Nashville, Tenn.—Plans of early and late bridges in the Southern States. (*West Gallery.*) 330
- 308 Herring, Rudolph, Philadelphia, Pa.—Plans of bridges, with photographs showing progress; section of sewers of Philadelphia. (*West Gallery.*) 330
- 308a McDonald, Charles, New York, N. Y.—Drawings and photographs of various iron bridges. (*West Gallery.*) 330
- 309 Chester, Stephen, New York, N. Y.—Exhibit relating to electrical engineering. (*West Gallery.*) 330
- 309a Pearce, J. B., Philadelphia, Pa.—Drawings relating to various works. (*West Gallery.*) 330
- 310 Linville, J. H., Philadelphia, Pa.—Bridges and bridge construction. (*West Gallery.*) 330
- 310a Phoenix Iron Co., Philadelphia, Pa.—Drawings relating to various works. (*West Gallery.*) 330
- 311 Clark, Reeves, & Co., Philadelphia, Pa.—Bridges and bridge construction. (*West Gallery.*) 330
- 311a Johnson, J., La Salle, Ill.—Drawings relating to various works. (*West Gallery.*) 330
- 312 Rockwood, Geo. F., New York, N. Y.—Photographs showing successive stages of engineering construction. (*West Gallery.*) 330
- 312a Fowler, Charles E., New Haven, Conn.—Plans, sections, and details of the sewerage and drainage system of New Haven and other public works. (*West Gallery.*) 330
- 313 Crezier, D. W. C., Chicago, Ill.—Model of hydrant and stopcock. (*West Gallery.*) 330
- 313a Bethlehem Iron Co., Bethlehem, Pa.—Drawings relating to various works. (*West Gallery.*) 330

tion of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.

## Engineering Designs.

- 314 Jervia, John B., Rome, N. Y.—Engineering drawings, relating to construction of canals; Carbondale railroad and Croton aqueduct. (*West Gallery.*) 330
- 314<sup>a</sup> Severt, Wm. A., Syracuse, N. Y.—Drawings relating to various works. (*West Gallery.*) 330
- 314<sup>b</sup> Cox, E. T., Indianapolis, Ind.—Drawings relating to various works. (*West Gallery.*) 330
- 314<sup>c</sup> Dudley, P. H., Cleveland, O.—Drawings relating to various works. (*West Gallery.*) 330
- 314<sup>d</sup> Drinker, Henry S., Philadelphia, Pa.—Drawings relative to tunnel excavation and timbering. (*West Gallery.*) 330
- 315 Foster, Wilbur F., Nashville, Tenn.—Model of Howe truss bridge. (*West Gallery.*) 330
- 316 Armington, James H., Brooklyn, N. Y.—Exhibit relating to gas engineering. (*West Gallery.*) 330
- 316<sup>a</sup> Smedley, Samuel L., Philadelphia, Pa.—Drawings of Public Works in the City of Philadelphia. (*West Gallery.*) 330
- 316<sup>b</sup> Davis, E. T. C., Pottsville, Pa.—Drawings and photographs relating to various works. (*West Gallery.*) 330
- 316<sup>c</sup> Darrach, S. A., East Orange, N. J.—Drawings relating to the Water Works of Philadelphia. N 58. 330
- 316<sup>d</sup> Canfield, Frederic A., Dover, N. J.—Drawings relating to various works. (*West Gallery.*) 330
- 316<sup>e</sup> Grant, Wm. A., New York, N. Y.—Topographical map of recent additions to New York City, with proposed street and avenue plans. (*West Gallery.*) 330
- 317 Thurston, Robert M., Hoboken, N. J.—Exhibit relating to mechanical engineering; detail drawings of machinery, etc., by Robert Fulton. (*West Gallery.*) 330
- 317<sup>a</sup> Tarr, H. G. H., Orbesonia, Pa.—Stove plates cast in 1763 and 1792. (*West Gallery.*) 330
- 317<sup>b</sup> Stanley, I. N., Brooklyn, N. Y.—Improved setting of retorts. (*West Gallery.*) 330
- 318 Ellis, Theo. G., Hartford, Conn.—Engineering exhibit relating to river and harbor improvement. (*West Gallery.*) 330
- 319 McAlpine, Wm. J., Albany, N. Y.—Engineering exhibits relating to canals and inland navigation. (*West Gallery.*) 330
- 320 Bowden, J. H., Wilkesbarre, Pa.—Drawings relating to various works. (*West Gallery.*) 330
- 321 Smith, Wm. Sooy, Maywood, Ill.—Engineering exhibit relating to foundations and masonry. (*West Gallery.*) 330
- 322 Shedd, J. Herbert, Providence, R. I.—Engineering exhibits relating to sewerage and sanitary purposes. (*West Gallery.*) 330
- 323 Briggs, Robert, Philadelphia, Pa.—Exhibits of illustrations and diagrams of ventilating fans. (*West Gallery.*) 331
- 323<sup>a</sup> Thompson, D. M., Providence, R. I.—Pictures of cotton mill with description. (*West Gallery.*) 331
- 323<sup>b</sup> Union Iron Co., Buffalo, N. Y.—Model relating to iron works. (*West Gallery.*) 331
- 323<sup>c</sup> Wren, W. C., Brooklyn, N. Y.—Model of gas machinery. (*West Gallery.*) 331
- 323<sup>d</sup> Witherbee, J. F., Port Henry, N. Y.—Drawings and models relating to iron works. (*West Gallery.*) 331
- 323<sup>e</sup> Oxford Iron Co., Oxford, N. Y.—Drawings and photographs relating to iron works. (*West Gallery.*) 331
- 323<sup>f</sup> Smith & Sayre, New York, N. Y.—Drawings of exhaustor engine, shafting, and other machinery for gas works. (*West Gallery.*) 331
- 323<sup>g</sup> Paulding, Kemble, & Co., Cold Spring, N. Y.—Drawings relating to iron works. (*West Gallery.*) 331
- 323<sup>h</sup> Prindle, F. C., Philadelphia, Pa.—Drawings of dredging machinery, and gunpowder pile driver. (*West Gallery.*) 331
- 323<sup>i</sup> Patton, J. D., Norristown, Pa.—Drawings of machinery for burning petroleum gas on cars. (*West Gallery.*) 331
- 323<sup>j</sup> Risdon Iron & Locomotive Works.—Drawings of hydraulic machinery. (*West Gallery.*) 331
- 323<sup>k</sup> School of Mines of Columbia College, New York, N. Y.—Selected metallurgical drawings. (*West Gallery.*) 331
- 323<sup>l</sup> Glendon Iron Co., Easton, Pa.—Drawings relating to iron works. (*West Gallery.*) 331
- 323<sup>m</sup> Cambria Iron Co., Johnstown, Pa.—Drawings relating to iron works. (*West Gallery.*) 331
- 323<sup>n</sup> Birkenbine, H. P. M., Philadelphia, Pa.—Drawings of combined high and low pressure pumping engine, portfolio of details and drawings. (*West Gallery.*) 331
- 323<sup>o</sup> Hornig, Julius, Chicago, Ill.—Model of improved method of canal boat propulsion, with track and traction chain. (*West Gallery.*) 331
- 324 Shinn, Wm. P., Pittsburg, Pa.—Engineering exhibit relating to railroads and rolling stock. (*West Gallery.*) 332
- 324<sup>a</sup> Nichols, H. K., Pottsville, Pa.—Model of rail splice. (*West Gallery.*) 332
- 324<sup>b</sup> Bishop, D. E., New York, N. Y.—Models of special rail joint. (*West Gallery.*) 332
- 324<sup>c</sup> Sandberg, C. P., London, England.—Drawings of standard rail sections. (*West Gallery.*) 332
- 325 Emery, Chas. E., New York, N. Y.—Drawings of marine engines and boilers; connected arch boiler; compound engine for Phoenix Iron Company. (*West Gallery.*) 334
- 325<sup>a</sup> Gaujot, E., Philadelphia, Pa.—Geological maps, sections, and pamphlets of the State of Michigan. V 67 to 69. 335
- 326 Hanging Rock Iron Region, Iron-ton, O.—Geological map of the Ohio portions of the Hanging Rock iron regions. (Presented by Mr. John Campbell.) T 68. 335

## Engineering Designs, Gymnastic Apparatus, Benevolent Societies.

- 327** Earnshaw, Henry, Cincinnati, O.—Photographs of parks and cemetery, water works machinery, reservoirs, and drawing of tunnel. (*West Gallery.*) 335
- 328** Cleveland, H. W. S., Chicago, Ill.—Design (adopted) for improvement of South Park, Chicago. (*West Gallery.*) 335
- 329** Bowditch, Ernest W., Boston, Mass.—Plans of proposed chain of parks for Boston; a cemetery, and a country estate. (*West Gallery.*) 335
- 330** Krause, H., New York, N. Y.—Topographical maps. (*West Gallery.*) 335
- 331** Sibeth, Otto, New York, N. Y.—Construction map New York Central Park. (*West Gallery.*) 335
- 332** Walling, H. T., Boston, Mass.—Topographical maps and atlases. (*West Gallery.*) 335
- 333** Bogart, John, New York, N. Y.—Engineering exhibit relating to park work, surveying, and geodesy. (*West Gallery.*) 335
- Physical, Social, and Moral Condition of Man.**
- 334** Health Lift Co. of New York, N. Y.—Reactionary lift apparatus. P 6a. 340
- 334a** Lawrence, John N., New York, N. Y.—Ten pin balls and sample pin. H 7a. 340
- 335** Shibe, J. D., Philadelphia, Pa.—Base balls. B 77. 340
- 335a** Automatic Swing Co., St. Louis, Mo.—Automatic swings. (*Outside space.*) 340
- 336** Reach & Johnston, Philadelphia, Pa.—Base balls and sporting goods. B 75. 340
- 336a** Wood, William, New York, N. Y.—Model of gymnasium with apparatus. T 55. 340
- 337** Marsh, Jas. P. & Co., Chicago, Ill.—Improved health lift. N 5a. 340
- 337a** Carr, W. B., & Co., Brooklyn, N. Y.—Base balls. F 71. 340
- 338** Rice, S. W., & Co., New York, N. Y.—Base and dead balls, uniforms, and sporting goods. B 75. 340
- 338a** Knight, W. A., Worcester, Mass.—Health lifts. B 74. 340
- 339** Hiester, Chas. Edward, Harriburg, Pa.—Exercising clubs of adjustable weight. N 50. 340
- 340** Leeds, Louis M., New York, N. Y.—Diagrams and charts on ventilation. B 78. 342
- 341** Derrom, Andrew, Passaic, N. J.—Workman's cottage. (*In Park.*) 342
- 342** Kasson, W. M., Department of Public Comfort. (*North, South, and West Entrances.*) 342
- 343** Department of Public Comfort.—Stationery, newspapers, periodicals, and photographs for sale. H 70 and N 6. 342
- 344** Rudolph & Walter, Camden, N. J.—Buffet. T 41 to 47. 342
- 345** Department of Public Comfort.—Café, Leland's. T 33 to 36. 342
- 345a** Hinvest, Robert, New York, N. Y.—Clamp and band for scouring masonry, hollow brick for ventilation, chimney top. (*Outside.*) 342
- 347** Centennial Safe Deposit Co., Philadelphia, Pa.—Safes for the protection of valuables. N 65. 343
- 348** Scott, J. W., & Co., New York, N. Y.—Foreign stamp albums. P 73. 344
- 349** Mayer, Moses, New York, N. Y.—Collection of coins. T 7a. 344
- 349a** New York Catholic Protectory, New York, N. Y.—Photographic views of the Protectory buildings. V 53. 346
- 350** Inventors' Protective & Benevolent Association of the United States, Pittsburg, Pa.—Working models of inventions of members of the Association. (*West Gallery.*) 346
- 350a** American Society for the Prevention of Cruelty to Animals, New York, N. Y.—Deodands, or instruments used in torturing dumb animals, taken from offenders; banners and illustrations. D 79. 346
- 350b** American Missionary Association, New York, N. Y.—Map, showing location of institutions and mission stations in the United States, photographs of buildings, examination papers, catalogues. (*South Gallery.*) 348
- 351** Young Men's Christian Association of North America, Executive Committee, Richard C. Morse, Secretary, New York, N. Y.—Map, pictures, and plans of Association buildings; reports, circulars, and other literature. (*South Gallery.*) 348
- 351a** Dod, S. B., Hoboken, N. J.—Bust of Col. John Sterns. (*West Gallery.*) 400
- 351b** Shippen, W. W., Hoboken, N. J.—Portraits of the Messrs. Stevens. (*West Gallery.*) 410
- 351c** Miller, William J., Philadelphia, Pa.—Engravings on whitening. 421
- 351d** Camp, J. H., Philadelphia, Pa.—Photographs of the drawing of Main Building and Machinery Hall. P 65. 430
- 351e** Sweeney, Thomas S., Cleveland, O.—Transparent photographic views in Ohio. (*Vestibule windows, Ohio State Building.*) 430
- 352** Heard & Sons, Cleveland, O.—Architectural design of the Ohio State Building. 441
- 353** Pfeiffer, Carl, New York, N. Y.—Design of New Jersey State Building. 442
- 354** Schwarzmans, H. J., Philadelphia, Pa.—Designs of Memorial Hall, Horticultural Hall, Judges' Pavilion, and Women's Pavilion. 442
- 355** Buzby, Albert G., Philadelphia, Pa.—Water motor for blowing organ bellows, etc. P 66. 56a
- 356** Stokes & Parriah, Philadelphia, Pa.—Passenger elevator. (*S. E. Central Tower.*) 563
- 357** Boston Hydraulic Motor Co., Boston, Mass.—Hydraulic motors for blowing Hook & Hastings' organ in gallery at east end of nave. L 79 and K 79. 563
- 358** Byrns & Bryan, New York, N. Y.—Ale pump. P 59. 565

## Railroad Cars, Vessels, Agricultural Products.

- 359 Pullman's Palace Car Co., Chicago, Ill.—Gold and silver model of a Pullman palace sleeping car. N 63. 571
- 360 Woodruff, Jonah, Philadelphia, Pa.—Silver model of sleeping car. N 61. 571
- 361 Snow, J. H., Bucksport, Me.—Model ship. H 70. 594
- 362 Neilson, George, Philadelphia, Pa.—Model of the ship "Independence," of Philadelphia. (*Centre Aisle.*) 594
- 363 State of New Jersey (by Geo. H. Cook, State geologist, New Brunswick, N. J.).  
 a Specimens of wood growing in New Jersey. T 70. 600  
 b Fertilizers and soils. 681
- 364 Philadelphia & Reading R. R. Co., Philadelphia, Pa.—Cereals. T 72. 620
- 365 Judy, W. W., St. Louis, Mo.—Game birds of Missouri, stuffed. T 60. 635
- 366 Bene, Creighton, & Co., New York, N. Y.—Feathers. H 76. 653
- 367 Campbell, S. S., Cadiz, O.—Samples of wool. V 61 to 65. 667
- 368 Baylis, H., Cadiz, O.—Samples of wool. V 61 to 65. 666
- 369 Birney, M. L., Bowerstown, O.—Samples of wool. V 61 to 65. 667
- 370 Quigley, Albert, Cadiz, O.—Wool. V 61 to 64. 667
- 371 Jamison, W. W., Cadiz, O.—Wool. V 61 to 64. 667
- 372 Faxon & Wright, Philadelphia, Pa.—Samples of wool extracted from rags composed of cotton and wool, by a new process. P 43. 667

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.

# GREAT BRITAIN.

(South of Nave, Columns 23 to 38.)

## Educational Books and Appliances.

### Educational Systems, Methods, and Libraries.

- 1 Sunday-School Union, London.—Works for Sunday-schools.—Books, magazines, cards, reward tickets, illuminations, and large type texts, Sunday-school registers, roll books, librarian and minute books; Sunday-school newspaper. 300
- 3 Bartholomew, John, Edinburgh.—Maps. 300
- 7 Adams, Walter Marsham, London.—The problem of Pythagoras; cœlometer for illustrating elementary astronomy; mensurator for solving triangles, etc. 302
- 8 Augener, George, & Co., London.—Editions of the classics and other printed music books. 302
- 8a Boosey & Co., London.—Band, choral, and household music. 302
- 9 Clark, Edward Podmore, Bath.—Military model apparatus for illustrating drill movements. 302
- 10 The British & Foreign Blind Association, for Promoting the Education and Employment of the Blind, London.—Writing frames, embossed books, and maps for the blind. 303
- 11 Dickinson & Higham, London.—The hexaglot Bible. 306
- 12 Dickes, William, London.—Chromo-lithography, engraving and photographic engraving, and photographic engraving and printing; framed oleographs, chromographs from stone and surface printing, wood engraving, photographic engraving, etc. 306
- 13 Scott, Robson John, London.—Blocks used for wood engravings; compound and bolted blocks of box and other woods. 306
- 14 Stephenson, Blake, & Co., Sheffield.—Specimens of printing types, book of specimens. 306
- 15 Ravenstein, Ernest George, Geographical Institute, London.—General and geological maps of New Zealand; physical and statistical atlas of United Kingdom; relief map of the United States; geographical and statistical works. 306
- 15a Johnston, W. & A. K., Edinburgh, Scotland.—Maps; illustrations of human anatomy, astronomy, botany, and mechanical powers. 306
- 16 Palmer, Samuel, London.—Index to the "Times" newspaper, a quarterly publication. 306
- 16a Warner, Robert, London.—Works on "Select Orchidaceous Plants." 306
- 17 Loth, John Thomas, Edinburgh.—Educational books and illustrations of the thirty-three degrees of the ancient and accepted Scottish rite. 306
- 17a Audsley & Bowes, Liverpool.—Works on "Ceramic Art in Japan." 306
- 18 Lockwood, Crosby, & Co., London.—Books, rudimentary, scientific, educational, and classical series. 306
- 19 Cassell, Pether, & Galpin, London.—Illustrated books, publications, serials; educational books and appliances; electrotypes of engravings on wood. 306
- 20 Smith, David, Halifax, Yorkshire.—The "Dyer's Instructor." 306
- 21 Dowson, Sutherland, & Co. (limited), London.—Complete file of "Iron," a weekly newspaper. 306
- 21a Price & Co., London.—Fac-similes from ancient manuscripts and printed books. 306
- 22 Potts, Roberts, M.A., Trinity College, Cambridge.—Educational books. 306
- 23 Murray, Andrew, London.—Illustrations and specimens of galls produced by mites, aphides, flies (cecidomyia), sandflies, cymipidæ. 306
- 23a Bradbury, Agnew, & Co., London.—Books and engravings. 306
- 24 Proprietors of the "Illustrated London News," London.—Specimens illustrating the art department of the "Illustrated London News." 306
- 25 Rola, Vincent, Bayswater.—Method for the piano, with diagrams and specimens of music. 306
- 26 Proprietors of the "Graphic," London.—Process of producing an illustrated newspaper, from the receipt of sketches to the final issue of printed sheets to the public. 306
- 27 Holdsworth, Edmund William Hunt, London.—Work on deep sea fishing and fishing boats. 306
- 28 Johnson, J. M., & Sons (limited), London.—Printing in color, show tablets. 306

classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



## Maps, Statistics, Scientific and Musical Instruments.

30 Rundell, Joseph Benjamin, South Kensington Museum, London.—Short-hand alphabet; maps, plans, etc., for educational atlases and other purposes; lithographic printing as applied to maps. 306

31 Paul, William, Waltham Cross, Herts.—Works on horticulture. 306

## Institutions and Organizations.

31a South Kensington Museum.—Objects exhibited by order of the Lords of the Committee of Council on Education. 310

31b Ordnance Survey of the United Kingdom of Great Britain and Ireland.—Ordnance maps. 311

31c Geological Survey of the United Kingdom of Great Britain and Ireland.—Maps. 311

31d Johnson, Edmund, London.—Catalogues and other works having reference to international exhibitions. 312

## Scientific and Philosophical Instruments and Methods.

31e Hicks, James Joseph, London.—Meteorological and scientific instruments. 320

32 Siemens, Charles William, London.—Pyrometers. (*In Machinery Hall.*) 320

32a Clay, Randolph, London.—A instrument for tracing ellipses and other curves. 320

b Model of a deck seat with life-raft and of a boat distinguishing hook. 594

32b Negretti & Zambra, London.—Meteorological and scientific instruments. 302

33 Lyon, Washington, London.—Calculating table for rapidly multiplying numbers above 12. 321

33a Zimdars, C. E., London.—Pneumatic signal and communication apparatus; pneumatic railway signals, indicating and registering apparatus. 321

34 Wier, M. A., & Co., London.—Hydro-gyrometer or revolution indicator. 321

35 Morton, George, London.—Chronometer and watch balance springs, wire, and gauge. 323

35a Gibson, William, Belfast.—Watches. 323

36 Smith, Borthwick, London.—Watches and chronometers, cases, dials, and movements. 323

36a Goggin, Jeremiah, Dublin.—Time-pieces. 323

36b Neal, John, London.—Gold and silver watches, chronometers, and time-pieces. 323

37 Sewill, J., Liverpool.—Marine chronometers and watches. 323

38 Mercer, Thomas, London.—Marine chronometers. 323

39 Kulberg, Victor, London.—Marine chronometers, watches, chronographs, repeaters, etc. 323

40 Dent, M. F., London.—Marine chronometers, watches, chronometer clocks, etc. 323

41 Whittaker, Richard, London.—Key-less watches. 323

42 Poole, James, & Co., London.—Marine chronometers and watches. 323

43 Nicole, Nielson, & Co., London.—Watches, chronometers, complicated watches, and chronographs. 323

44 Claxton, Robert, London.—Chronometer jewelings in all stages. 323

45 Frodsham, Charles, & Co., London.—Watches, clocks, and chronometers for astronomical purposes; pocket and marine chronometers. 323

46 Swift, James, London.—Microscopes and apparatus. 324

47 Middleton, Thomas John, London.—Magic lanterns, dissolving view apparatus, dissolving top for the oxyhydrogen lime light, lantern slides, etc. 324

48 Beck, R. & J., London.—Microscopes, telescopes, race glasses, surveying and meteorological instruments and tools. 324

49 Wheeler, Edmund, London.—Specimens for the microscope. 324

50 Dallmeyer, John Henry, London.—Astronomical and terrestrial telescopes, microscopes, photographic lenses, cameras, and apparatus. 324

51 Ross & Co., London.—Microscopes, monocular and binocular apparatus, object glasses, telescopes, and photographic lenses. 324

52 Crouch, Henry, London.—Microscopes, binocular, and with complete accessories for every class of scientific investigation; cabinets, lamps. 324

52a Rein, Frederick Charles, & Son, London.

a Magneto-electric machines. 325

b Acoustic instruments, speaking tubes and trumpets; acoustical contrivances for churches, public buildings, etc.; anti-acoustic protector. 327

53 India-Rubber, Gutta-Percha, and Telegraph Works Co. (limited), Silver-town, Essex.—Telegraph cables, insulated telegraph wires. 325

53a Mayer & Meltzer, London.—Galvanic batteries. 325

54 Siemens Bros., London.—Cable samples, and gutta-percha as applied to the manufacture of cables. 325

54a Lacey, Richard George, Coast Guard Station, Leigh, Essex.

a Alarm signal box for ships. 326

b Fisherman's block. 647

54b Kimpton, Thomas, London.—Pneumatic sound communicator. 326

54c Telegraph Construction & Maintenance Co. (limited), London.—Submarine telegraph cables. 326

55 Heaps, John Knowles, Holbeck, Leeds.—Violin and violoncello. 327

56 Smith, George, South Hackney.—Portable finger organ. 327

57 Boosey & Co., London.—Musical wind instruments, percussion instruments for bands. 327

58 Brinsmead, John, & Sons, London.—Grand, semi-grand, upright, and studio pianos; check repeater action for upright and grand pianos. 327

59 Collmann, Leonard W., London.—Cottage piano. 327

60 Besson, F., & Co., London.—Brass musical instruments. 327

## Musical Instruments, Sports, Construction of Buildings.

61 Browne, H. Justin, London.—Up-right cottage piano fortes. 327

## Physical, Social, and Moral Condition of Man.

62 Nicholson, Hamlet, Rochdale.—Cricket and playing balls. 340

62a Lewis, J., Edinburgh.—Curling stone. 340

63 Cochrane, Robert C. E., Athlone, Ireland.—Drawings illustrating the application of concrete to the erection of an improved construction of dwellings. 343

63a Greenway, Henry, Plymouth.—Drawings of hospital construction. 346

(N.B.—Certain exhibits in this department from Great Britain are installed in Agricultural Hall, and catalogued in Part IV.)

## NEW SOUTH WALES.

(North of Nave, Columns 10 to 17.)

## Educational Publications, Statistics, Maps, Photographs, etc.

## Educational Systems, Methods, and Libraries.

1 Mechanics' School of Arts, Sydney.—Wax seal impression of corporate seal. 302

2 Government Printing Office, Sydney, New South Wales.

a Meteorological results, and report on education. 305

b Government gazettes, statutes, statute index, specifications of patents, parliamentary hand book, blue book and statistical register, census reports on railways, Rae's poems, newspapers, Australian languages. 306

## Institutions and Organizations.

3 New South Wales Commissioners, Sydney.—Birds of Australia, prepared by Thorpe. 312

4 Trustees of the Australian Museum, Sydney.—Specimens of natural history of Australia. 312

## Scientific and Philosophical Instruments and Methods.

5 Parrot, T. S., Sydney.—Semaphore, an instrument designed for army signaling purposes. 326

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Engineering, Architecture, Maps, etc.

6 New South Wales Commissioners, Sydney.—Topographical and geological maps and sections of New South Wales. 335

## Physical, Social, and Moral Condition of Man.

7 Government Printing Office, Sydney.—Industrial Progress of New South Wales; Transactions of Royal Society. 347

## Photography.

1 The Commission.—Photographic views of public buildings, scenery, etc., in and around Sydney, N. S. W. 430

2 Richards, T., Sydney.—Photographic views of buildings, etc., in and around Sydney; photographic views of Blue Mountains and valley of the Grose; photographic views of entomological collection of New South Wales. 430

3 Degotardi, John, Sydney.—Photo-mechanical printing. 432

4 Richards, T., Sydney.—Photo-lithographs. 432

## Hydraulic and Pneumatic Apparatus.

1 Postle, Sydney.—Ice machine. 568

## VICTORIA.

*(North of Nave, Columns 10 to 17.)*

## Publications, Statistics, etc.

**Educational Systems, Methods, and Libraries.**

- 1 Educational Department of Victoria, Melbourne.—Photographic views of state schools in Victoria. 300
- 2 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Portfolios of music by W. H. Glen. 302
- 3 Victorian Asylum & School for the Blind, Melbourne.—Baskets, perambulators, portmanteaus, trunks, mats, fancy wool-work, etc., made by the pupils. 303
- 3a Victorian Asylum for Deaf & Dumb.—Photographs. 303
- 4 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Official records, catalogues, lectures, reports, medical works, school books, sermons, and general literature. 304
- 5 Ferres, John, Government Printer, Melbourne.—Reports and statistics from the principal government institutions of Melbourne; Victorian newspapers. 305
- 6 Warrnambool, Borough Council for.—Statistics of the borough. 305

**Scientific and Philosophical Instruments and Methods.**

- 7 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Bell and stand. 327
- 8 Kilner, Joseph, Richmond.—Piano forte. 327

**Engineering, Architecture, Maps, etc.**

- 9 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Miscellaneous maps, etc. 330
- 10 Surveyor-General of Victoria, Melbourne.—Maps and plans of the colony of Victoria. 330

**Physical, Social, and Moral Condition of Man.**

- 11 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.
  - a Patent ceiling ventilator; model of Victorian bush residence, with huts and various kinds of fencing. 342
  - b Sovereigns and half-sovereigns from Royal Victorian mint, Melbourne. 344
  - c Baskets, mats, etc., made at Coranderk aboriginal mission station; vocabulary of Victorian aboriginal dialects, bluestone tomahawk, photographs of Victorian aborigines. 348
- 12 Bank of Victoria, Melbourne.—Bank notes and statistics of the bank. 344
- 13 Commercial Bank of Australia, Melbourne.—Bank notes, photographs, and statistics of the bank. 344
- 14 National Bank of Australasia, Melbourne.—Bank notes and statistics of the bank. 344
- 15 Penal Department, Inspector-General of Melbourne.—Warder's uniform, prisoners' clothing, hats, boots, shoes, mats, etc. 345

## CANADA.

*(North of Nave, Columns 16 to 23.)*

## Educational Collections.

**Educational Systems, Methods, and Libraries.**

- 1 Merritt, J. P., St. Catherine's, Ont.—Metric and chronological tables, chronotable of Canada. 300
- 2 Tennant & McLachlan, Hamilton, Ont.—Penmanship. 300
- 3 Pearse, James, Chatham, Ont.—Penmanship. 300
- 4 Browne, James, Toronto, Ont.—Chart stand and illustrator. 300

- 5 Educational Department, Toronto, Ont.—This is a department of State of the Province of Ontario, constituted by a committee of the Executive Councils, and is presided over by a member thereof, who is directly responsible to the Legislature. Minister of Education, Hon. Adam Crook, LL.D.; Deputy Minister of Education, John George Hodgins, LL.D.; Secretary, Abraham Marling, LL.D. 300
- 6 Beatty, L. J., Belleville, Ont.—Penmanship. 300

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Educational Appliances, Scientific and Musical Instruments, etc.

- 7 Hector, Thos., Ottawa, Ont.—Rotary polar map of the world. 300
- 8 Genest, P. M. A., Quebec, Q.—Map of "La Nouvelle France." 300
- 9 Tackabury, J. N., Montreal, Q.—Dominion atlas, maps of Ontario and Quebec. 300
- 10 May, John P., Canada School Apparatus Co., Toronto, Ont.—Chemical laboratories, anatomical models, object-lesson cabinets, etc. 300
- 12 English, Ch., St. John, N. B.—Composition blackboard. 300
- 13 Hill, C. P., Halifax, N. S.—Photograph Halifax Industrial School. 300
- 15 McGill University, Montreal, Q.—Calendars, medals, photographs of universities. 301
- 16 Université Laval, Quebec, Q. 303
- 17 Collège Nicolet, Nicolet, Q. 303
- 18 Maitrise St. Pierre, Montreal, Q. 303
- 19 Ecole du Plateau, Montreal, Q. 303
- 20 Collège Ste. Hyacinthe, Ste. Hyacinthe, Q. 303
- 21 Séminaire Ste. Thérèse, Ste. Thérèse, Q. 303
- 22 Collège Joliette, Joliette, Q. 303
- 29 Providence, Montreal, Q. 303
- 30 Bon Pasteur, Montreal, Q. 303
- 33 Hopital Général, Quebec, Q. 303
- 34 Hopital Général, Montreal, Q. 303
- 35 Frères de la Charité, Montreal, Q. 303
- 36 Hopital du Sacré-Cœur, Montreal, Q. 303
- 39 Convent de Sillery, Quebec, Q. 303
- 40 Campbell, James, Toronto, Ont.—Books. 306
- 41 Weld, W., London, Ont.—Farmer's Advocate. 306
- 42 Lovell Printing & Publishing Co., Montreal, Q.—School and other books. 306
- 43 Webster, Geo., Hamilton, Ont.—Bible, printed. 306
- 44 Sheppard, W., Quebec, Q.—Bible (1555). 306
- 45 MacKinlay, A. & W., & Co., Halifax, N. S.—Map of the United States; series of school books. 306
- 51 Hearne & Harrison, Montreal, Q.—Surveying and other instruments. 320
- 52 Ross, Alex., Montreal, Q.  
a Odometer. 320  
b Indicating and registering apparatus. 321
- 53 Landham, F., Ottawa, Ont.—Lumbermen's measuring rule. 322
- 54 Sabie, B., Point Lévis, Q.—Sliding foot rule. 322
- 56 Morris, J. W., Hamilton, Ont.—Universal clock. 323
- 57 Duquet, C., Quebec, Q.—Watchman detector. 323
- 58 Lefort & Chapleau, Montreal, Q.—Watchman detector. 323
- 62 Marrin Bros., Parkhill, Ont.—Parlor organ. 327
- 63 Bell, W., & Co., Guelph, Ont.—Cabinet organs. 327
- 66 Delamere, J. H., Toronto, Ont.—Organs. 327
- 66 Mee, C., & Co., Kingston, Ont.—Melodeon, parlor organ, and organ keys. 327
- 68 Dominion Organ Co., Bowmanville, Ont.—Organs. 327
- 70 Knott, John, & Son, Hamilton, Ont.—Upright piano. 327
- 71 Heintzman & Co., Toronto, Ont.—Square piano. 327
- 72 Kater, Th., Hamilton, Ont.—Pianos, parts of pianos, etc. 327
- 73 Weber & Co., Kingston, Ont.—Pianos. 327
- 74 Rainer & Son, Guelph, Ont.—Piano. 327
- 75 Draper, E., London, Ont.—Harmonic instructor and musical game. 327
- 77 Lonnais, T., Quebec, Q.—Violin. 327
- 79 Sheppard, W. G., Quebec, Q.—Violoncello, 1772. 327
- 80 New Dominion Organ Co., St. John, N. B.—Cabinet organs. 327
- 81 Gates, E. E., Halifax, N. S.—Cabinet organs. 327
- 82 Brockley & Co., Halifax, N. S.—Upright piano and stool. 327

## Engineering, Architecture, Maps, etc.

- 83 Gray, F. Wood, Quebec, Q.—Engineering drawings. 330
- 84 Cousin, Paul, Quebec, Q.—Map of city of Quebec, etc. 330
- 86 Trout, W. H., Peterborough, Ont.—Mechanical drawings. 330
- 87 Johnstone, J., Ottawa, Ont.—Geographical drawing. 335
- 88 Burpee, M., Upper Sheffield, N. B.—Mechanical drawing. 335
- 89 Honeyman, Dr., Halifax, N. S.—Geological map of Nova Scotia. 335
- 90 Anderson, A. T., Br. Col.—Physical map of British Columbia. 335

## Physical, Social, and Moral Condition of Man.

- 92 The Corporation of Toronto, Toronto, Ont.—Photographic views of buildings in Toronto. 345

## Institutions and Organizations.

- 46 Bell, Robert, Montreal, Q.—Indian curiosities and manufactures. 312
- 47 St. Amand, A., Loretto, Q.—Indian curiosities. 312
- 48 Advisory Board, Victoria, Br. Col.—Indian goods and manufactures. 312

## Scientific and Philosophical Instruments and Methods.

- 49 Cornell, S., Widden Stantio, Ont.—Marine compass. 320
- 50 Meyer, Aleert, F. W., Montreal, Q.—Apparatus for determining inaccurate points. 320

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## FRANCE.

*(South of Nave, Columns 39 to 53.)***Educational Publications, School Apparatus.****Educational Systems, Methods, and Libraries.**

- 1 Godchaux, Aug., & Co., Paris.—Copy books for schools. 300
- 2 Rives, Paris. 300
- 3 School furniture. 301
- 4 School materials. 301
- 5 Bapterosses, F., Paris.—School materials. 300
- 6 Desbarolles, Paris.—Works on penmanship. 300
- 7 Delalain, J., & Son, Paris.—School books in different languages. 300
- 8 Le Brun, Paris.—Elementary dictionaries. 300
- 9 Lagout, Nogent-sur Seine (Aube).—School materials. 300
- 10 Leroy, P., Brides-les-Bains, near Moutiers (Savoy).—Educational system. 300
- 11 Maitrepierre, Paris.—Copy books. 300
- 12 Raybaud, Draguignan (Var).—Reading method. 300
- 13 Touron, Emile, Bois de Colombes (Seine).—Geometrical problems. 300
- 14 Taulard, Principal of Menelou-Salon School, Menelou-Salon (Cher).—Pupils' work. 300
- 15 Mouret, Paris.—Globe. 301
- 16 Levesque, Villeneuve St. Denis (Seine and Marne).—Metrical system. 301
- 17 Eloffé & Co., Paris.—Works on natural history; terrestrial globes. 301
- 18 Level, Paris.—Medical and graphic systems. 301
- 19 La Cointe, Evreux (Eure).—Arithmetical problems. 302
- 20 National School of Engineering, Paris.—Documents and reports of the school. 302
- 21 National School of Mines, Paris.—Documents and reports of the school. 302
- 22 Méilot, A., Paris.—Music method. 302
- 23 Dauphin, Lunéville (Meurthe and Moselle).—Printing in relief for the blind. 303
- 24 Dupont, Paul, Paris.—Works on government and education. 306
- 25 Dupleix Bros., Paris.—System of stenography. 306
- 26 Dunod, Paris.—Scientific and mechanical works. 306
- 27 Dumaine, J., Paris.—Military books. 306
- 28 Ducrocq, P., Paris.—Children's books. 306
- 29 Deucher & Co., Paris.—Works on art and architecture; chromo-lithographs, engravings and photographs. 306
- 30 Didier & Co., Paris.—Academical books. 306
- 31 "Gazette des Beaux Arts," Paris.—Specimens of the paper and its engravings. 306
- 32 Gauthier-Villars, Paris.—Scientific books. 306
- 33 Furne, Jouvett, & Co., Paris.—General literature. 306
- 34 Firmin Didot & Co., Paris.—Illustrated literary works. 306
- 35 Laboulaye, Ch., Paris.—Dictionary of arts and manufactures, and works concerning industrial art. 306
- 36 Jouaust, D., Paris.—Literary works. 306
- 37 Jacquemin, Paris.—Historical costumes. 306
- 38 Hetzel, J., & Co., Paris.—Books. 306
- 39 Hennuyer, Paris.—Books. 306
- 40 Hachette & Co., Paris.—Educational, literary, and illustrated works. 306
- 41 Guillaumin & Co., Paris.—Works on political economy and finance: "Journal des Economistes." 306
- 42 Guérin, L., & Co., Paris.—Works on science and art. 306
- 43 Lemerre, Alphonse, Paris.—Classical work. 306
- 44 Desteract, A., Paris.—Account books. 306
- 45 Leroy, André, Angers (Maine and Loire).—Pomological dictionary. 306
- 46 Leroy, P. N., Paris.—Illustrated historical works. 306
- 47 Maisonneuve & Co., Paris.—Books. 306
- 48 Loones, Paris.—History of painters. 306
- 49 Maison Rustique, Agricultural Library, Paris.—Works on agriculture and horticulture. 306
- 50 Mariel, H. de, New York.—Work on the commerce and industry of the United States. 306
- 51 Mame, A., & Son, Tours.—Classical works. 306
- 52 Masson, G., Paris.—Works on medicine, natural history, etc. 306
- 53 Morel, Mrs. A., & Co., Paris.—Works on architecture. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Educational Publications, Statistics, Scientific Instruments.

- 54 Plon & Co., Paris.—Illustrated works on history, jurisprudence, etc. 306
- 55 Delahaye, V. A., & Co., Paris.—Works of the Biological Society and the Anatomical Society of Paris. 306
- 56 Delagrave, Ch., Paris.—Geographical and classical books. 306
- 57 Ballue, A., Paris.—Illustrated publications. 306
- 58 Balny, A., Espaubourg (Oise).—Work on agriculture. 306
- 59 Baudry, T., Paris.—Works on engineering, mechanics, mining, metallurgy, and railroads. 306
- 60 Beckensteimer, Lyons.—Works on electricity. 306
- 61 Belin, Mrs., Paris.—Classical books; maps in relief. 306
- 62 Belleville, Col., Toulouse.—Report on hydrophobia; physiological reports. 306
- 63 Boulanger, Mrs., Paris.—Books. 306
- 64 Calman, Lévy, Paris.—Literature, history, and modern drama. 306
- 65 Charpentier & Co., Paris.—Various publications. 306
- 66 Colin & Co., Paris.—Classical books. 306
- 67 Reinwald, E., & Co., Paris.—Books. 306
- 68 Rothschild, J., Paris.—Books. 306
- 69 Rudy, Charles, Paris.—The Chinese mandarin language. 306
- 70 Staaff, Paris.—Work on military tactics. 306
- 71 Tanera, Paris.—Topographical maps and plans of battles; military books. 306
- 72 Thirion, Ch., Paris.—Inventors' and patentees' tables. 306
- 73 Central Union of Fine Arts, Paris.—Albums and publications. 306
- 74 Chervin, Paris.—Method of curing stammering. 306
- 75 Dron, Paris.—Commercial books. 306
- 76 City of Paris.—Statistics, regulations, models, programmes, reports, books, and scholars' work of the schools of Paris; report on primary instruction by Mr. Gréard. 306

## Institutions and Organizations.

- 77 Department of Public Education, Paris.—Regulations of the French Institute, the College of France, and the National Library; books and catalogues; report on primary education at the Vienna Exposition. 310
- 78 Chaix, A., & Co., Paris.—Scientific books. 311
- 79 Industrial School, St. Quentin and Aisne.—Albums, cartoons, etc. 311
- 80 Elementary Education Society, Paris.—Pupils' works and report. 311
- 81 Publishers', Printers', and Stationers' Club, Paris.—Publishing, printing, and stationery. 311
- 82 City of Paris.—Catalogue of the French section of the London Exhibition. 312

- 83 Bouvier, A., Paris.—Skeletons of gorillas; catalogue of the birds of Central Africa; map. 312
- 84 Department of Agriculture & Commerce, Paris.—Prizes awarded to agriculturists by various fairs. 312

## Scientific and Philosophical Instruments and Methods.

- 85 Alvergnot Bros., Paris.—Scientific instruments. 320
- 86 Grivolat L., Paris.—Solar clock. 320
- 87 Lion & Guichard, Paris.—Barometers, thermometers, and pyrometers. 320
- 88 Louvet, A., Pont l'Évêque (Calvados).—Support for instruments. 320
- 89 Optical Society, Paris.  
a Mathematical instruments. 320  
b Optical instruments. 324
- 90 Malligand, Ed., jr., Paris.—Alcohol tester. 320
- 91 Naudet & Co., Paris.—Barometers. 320
- 92 Perreux, L. G., Paris.  
a Instruments of precision. 320  
b Indicating apparatus. 321
- 93 Colange, Leo de, Philadelphia.—Automatic indicator. 321
- 94 Haas, B., jr., & Co., Paris.  
a Carriage controllers. 321  
b Clocks, watches, musical boxes, and singing birds. 323
- 95 Nicolas & Chamon, Paris.—Water meters. 321
- 96 Rigollot, Paris.—Water meter. 321
- 97 Rubolti, Cesar, Grenoble.—Spigot meter. 321
- 98 Deschiens, Paris.—Calculating machines. 321
- 99 Fialont, Mrs., Paris.—Measuring tapes. 322
- 100 Chameroi & Co., Paris.—Scales. 322
- 101 Deleuill, Paris.—Photometer, scales, and pneumatic machines. 322
- 102 Panier, Ernest, Paris.—Mathematical instruments. 322
- 103 Paupier, Leonard, Paris.—Scales for railroads. 322
- 104 Trayvou, B., Paris.—Scales. 322
- 105 Savary & Rondeleux, Paris.—Gold and silver watches. 323
- 106 Boucher-Gravet, Paris.—Clocks. 323
- 107 Cressier, E., Besançon.—Watches and clocks. 323
- 108 Bréguet & Co., Paris.—Chronometers. 323
- 108a Hangard, Paris.—Springs for watches. 323
- 109 Farcot, Eugène, Paris.—Clocks. 323
- 110 Gondy, J. B., & Co., Pontarlier (Doubs).—Watches. 323
- 111 Malfait, F., & Co., Paris.—Clocks. 323
- 111a Moat, Eugène, Paris.—Springs for watches. 323
- 112 Marrel, J. E., Paris.—Clocks. 323
- 113 Mayet-Tissot, Morez (Jura).—Regulators. 323

## Scientific and Musical Instruments, Engineering Designs.

- 114 Rodanet, A. H., Paris.—Marine and pocket chronometers, watches, and chains; clocks, registers. 323
- 115 Stüssfeld, Lorsch, & Co., Paris.—Marble clocks. 323
- 116 Vignon, A., Paris.—Clocks. 323
- 117 Lachenal, Favre, & Co., Paris.—Stereoscopes with views on glass. 324
- 118 Bardou & Sons, Paris.—Optical instruments. 324
- 119 Darlot, Paris.—Photographic apparatus and photographs. 324
- 120 Derogy, Paris.—Optical instruments. 324
- 121 Duboscq, J., Paris.—Optical instruments. 324
- 122 Feil, Charles, Paris.—Optical goods. 324
- 123 Henry-Lepaute, Paris.—Lenses for lighthouses. 324
- 124 Hoel, J., Paris.—Spectacles and eyeglasses. 324
- 125 Lacombe, Paris.—Opera glasses. 324
- 126 Nachet, A., Paris.—Microscopes. 324
- 127 Secrétan, Paris.—Astronomical and scientific instruments. 324
- 128 Radiguet, Paris.—Mirrors. 324
- 129 Lemaire, Paris.—Eyeglasses, opera glasses, etc. 324
- 130 Loiseau, A., Son, Paris.—Electrical apparatus. 325
- 130 Bréguet, Paris.—Models of magneto-electric machines for laboratories. 325
- 131 Carré, E., Paris.—Pneumatic pumps, electrical machines, and light regulators. 325
- 132 Janin, Paris.—Magnets. 325
- 133 Gramme's Magneto-Electric Machine Co., Paris.—Galvano-plastic machine, etc. 325
- 134 Walcker, A. G., Paris.—Pneumatic and telegraph bells applied to the navy and railways. 326
- 135 Alexandre & Son, Paris.—Church and parlor organs. 327
- 136 Angot & Dubreuil, Ivry-la-Bataille (Eure).—Wooden musical instruments. 327
- 137 Beunon, Paris.—Upright piano. 327
- 138 Baudet, Paris.—Pianos. 327
- 139 Bontems, B.—Singing and moving birds. 327
- 140 Brunning, Otto, Paris.—Upright pianos. 327
- 141 Debain & Co., Paris.—Mechanical piano. 327
- 142 Focké & Son, Paris.—Pianos. 327
- 143 Fortin Bros., Paris.—Felts for pianos. 327
- 144 Gavioli, C., jr., Paris.—Pianos and organs; automatic musical instruments. 327
- 145 Gavioli & Co., Paris.—Organs, pianos, flutes, and band instruments. 327
- 146 Gehrling, Ch., jr., Paris.—Piano movements. 327
- 147 Goumas, P., & Co.—Wind musical instruments and saxophone. 327
- 148 Koenig, Rudolph, Paris.—Acoustic apparatus. 327
- 149 Kriegelstein & Co., Paris.—Pianos. 327
- 150 Lecomte, A., & Co., Paris.—Musical instruments. 327
- 152 Mennesson, Emil, Reims.—Violins, altos, bass, and double bass. 327
- 153 Morand & Tourneur, Paris.—Mechanical harmoniums. 327
- 154 Thibouville, Lamy, Paris.—Musical instruments. 327
- 155 Zimmermann, Henry, Paris.—Organ pipes. 327
- Engineering, Architecture, Maps, etc.**
- 156 Suez Canal Co., Paris.—Maps and plans of the Suez Canal. 330
- 157 Caligny, A. de, Versailles.—Report on hydraulics. 330
- 158 Blanchet, A. P., Henrichemont (Cher).—Projected channel through Nicaragua. 330
- 159 Chanudet, L., Neuilly-sur-Seine.—Model of wooden pavement. 330
- 160 Le Moulmier, Paris.—Sample of pavement. 330
- 161 Department of Public Works, Paris.
- a Roads, bridges, viaducts, dams, hydraulic press, docks, embankments, aqueducts, and reservoirs. 330
- b Railroads; steel rails, depots, rolling stock, etc. 332
- c Navigation; lighthouses, buoys, and beacons, with apparatus for lighting; life-saving apparatus from the Life-Saving Society. 334
- d Geological and agricultural maps, etc., of France; reports and documents from the National School of Mines. 335
- 162 Monteil & Cassaynes, Paris.—Technical report upon the Suez Canal. 330
- 163 City of Paris.—Reports of the various departments of the city of Paris, maps, plans, etc.; projected and completed bridges by Mr. Legrand; promenades by Mr. Alphand; architectural reports of public buildings by Messrs. Ballu, Baltard, Duc, Davioud, Magne, and Frenique; portfolio of engravings of monuments; historical works; plan of Paris by Quésnel; archaeological reports by Vacquer; photographs; reports and plans of the sewers of Paris. 330
- 164 Edoux, Leon, Paris.—Special system for mountain railroads. 332
- 165 Transatlantic Steamship Co., Paris.—Model of the steamship "Pereire." 334
- 166 Beaumarchey, Louis, Aix (Provence).—Astronomical maps and pictures, astronomical indicator, cosmographic apparatus. 335
- 167 Fay, de, War Department, Paris.—Relief plans. 335
- 168 Erhard, Paris.—Geographical maps. 335
- 169 Furne, Jouvett, & Co., Paris.—Geographical military atlas adopted by the military school of St. Cyr. 335

## Engineering Designs, Physical Apparatus, Benevolence.

170 D'Italo, Enrico F., Paris.—Geographical works, atlas, and maps. 335

171 Thomas, Paris.—Chronometric and cosmographic instruments. 335

172 Wührer, L., Paris.—Geographical maps. 335

173 Lienard, F.—Plans in relief, of Paris and Jerusalem. (*In Park.*) 335

**Physical, Social, and Moral Condition of Man.**

174 Brière, Jules, Alençon (Orne).—Nursing-nipples. 340

175 Carue, Paris.—Gymnastic apparatus. 340

176 Paz, E., Paris.—Gymnastic apparatus. 340

177 Regnier, Paris.—Economical wooden roofing. 342

178 Thirion, Ch., Paris.—Writing tablets. 343

178a Society of Comparative Legislation, Paris.—Legislative works. 345

179 Marbeau, Paris.—Plans, documents, etc., of a foundling hospital. 346

180 City of Paris.  
a Reports of the municipal authorities. 345  
b Reports of the municipal lying-in asylum, by Dr. Tarnier. 346

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



## GERMANY.

*(South of Nave, Columns 28 to 38.)*

## Books, Maps, Engravings, Type.

**Educational Systems, Methods, and Libraries.****COLLECTIVE EXHIBIT OF THE BOOK TRADE AND PRINTING INDUSTRIES OF GERMANY.—BOOKS, LITHOGRAPHIC PRINTS, COPPER-PLATE AND XYLOGRAPHIC WORK, MAPS, PHOTOGRAPHS, GRAPHIC, AND OTHER METHODS OF INSTRUCTION, TYPE FOUNDERS' WORK.** 300-306

- 1 Ackermann, Theodore, Munich.—Books with engravings.
- 2 Amelang, C. F., Leipsic.—Books.
- 3 André, Joh., Offenbach-on-Main.—Musical publications.
- 4 Anton, Ed., Halle-on-Saale.—Books.
- 5 Bach, I. G., Leipsic.—Lithographs.
- 6 Baedeker, G. D., Essen.—Books.
- 6a Baedeker, J., Iserlohn.—Illustrated books.
- 7 Baedeker, Carl, Leipsic.—Books.
- 8 Bauer's Type Foundry, Frankfurt-on-Main.—Type, etc.
- 8a Bazar Publishing Co., Leipsic.—Books.
- 9 Beck, C. H., Nördlingen.—Books, plates, and designs.
- 10 Bomsdorf, Oscar von, Leipsic.—Maps.
- 10a Brend'amour & Co., Dusseldorf.—Albums.
- 11 Brandstetter, Friedrich, Leipsic.—Illustrated and other books.
- 12 Breidenbach & Baumann, Dusseldorf.—Art publications.
- 13 Breitkopf & Härtel, Leipsic.—Musical classics, catalogue, etc.
- 14 Brockhaus, F. A., Leipsic.—Books and maps.
- 15 Back, Leipsic.—Publications.
- 16 Publishing & Printing House of the Orphan Asylum, Halle-on-Saale.—Books and Bibles.
- 17 Cohen & Risch, Hanover.—Books on gardening, etc.
- 18 Costenoble, Hermann, Jena.—Books and maps.
- 19 Cotta, I. G., Stuttgart.—German classics.
- 19a Official Gazette of the German & Prussian Governments, Berlin.—Volume for 1875.
- 20 Drugulin, W., Leipsic.—Type and printing.
- 21 Duncker & Humblot, Leipsic.—Books.
- 22 Dürr, Alphonse, Leipsic.—Illustrated books.
- 23 Engelhorn, I., Stuttgart.—Illustrated work on Italy, etc.
- 24 Engelmann, Wilh., Leipsic.—Books.
- 25 Ernst & Korn, Berlin.—Plates from architectural works.
- 26 Eschbach & Schaefer, Leipsic.—Lithographs.
- 27 Fritzsche & Zachiesche, Leipsic.—Illustrated postage-stamp albums.
- 28 Hennes, A., Berlin.—Piano forte method.
- 31 Fischer, Theodore, Cassel.—Publications, plates, and maps.
- 32 Fleischer, Ernst, Leipsic.—Scientific and school books.
- 33 Flemming, Carl, Glogau.—Maps, atlases, books, etc.
- 34 Flinsch Type Foundry, Frankfurt-on-Main.—Specimens of printing.
- 35 Friderichs, R. L., Elberfeld.—Publications.
- 36 Fries, Hermann, Leipsic.—Books.
- 37 Fritzsche, Gustav, Leipsic.—Books.
- 38 Furstenuau, Oscar, Leipsic.—Lithographs.
- 39 Gebhardt, I. M., Leipsic.—Manuals of arts and sciences, etc.
- 40 Hauboldt, Otto, Leipsic.—Publications.
- 41 Photographic Association, Berlin.—Picture books.
- 42 Grunow, F. W., Leipsic.—Publications.
- 43 Habel, Carl, Berlin.—Publications.
- 44 Glaser, Louis, Leipsic.—Lithographs in imitation of photography.
- 45 Grote, G., Berlin.—Illustrated classics and photographs.
- 46 Grumbach, C., Leipsic.—Illustrated books, pictures, and engravings.
- 47 Hans, L., Berlin.—Prints and plates.
- 48 Hartknoch, Joh. Fr., Leipsic.—Books.
- 49 Hartung, H., & Son, Leipsic.—Books.
- 50 Haessel, H., Leipsic.—Dictionaries.
- 52 Hermann, Bernhard, Leipsic.—Lexicon of dates.
- 53 Heymann, Carl, Berlin.—Books.
- 54 Hinrichs, I. C., Leipsic.—Publications.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Books, Printing, Engravings, etc.

- 54<sup>a</sup> Hirschman, I. M., Offenbach-on-Main.—Labels and signs.
- 55 Hirt, Ferdinand, Breslau.—School books.
- 56 Hirt & Son, Leipsic.—Geographical publications.
- 57 Hirzel, Solomon, Leipsic.—Dictionary and books.
- 58 Hofmeister, Fr., Leipsic.—Musical publications.
- 58<sup>a</sup> Hoppe, E., & Co., Berlin.—Chromos.
- 59 Hunderstund & Pries, Leipsic.—Engravings and prints.
- 60 Bibliographic Institute, Leipsic.—Classics, books of travel, and maps.
- 61 Geographical Institute, Weimar.—Atlases, maps, and globes.
- 62 Photo-lithographic Institute, Weimar.—Maps.
- 63 Issleib & Rietzschel, Gera.—Atlases, maps, and books.
- 65 Kaeseberg, Hugo, Leipsic.—Wood cuts.
- 66 Kafemann, A. W., Dantzig.—Books, etc.
- 67 Kern, I. U., Breslau.—Books.
- 68 Kirmayer, Max, Munich.—Map.
- 69 Klingenberg Bros., Detmold.—Scientific publications.
- 71 Koehler, Carl, Darmstadt.—Chromolithographic views, etc.
- 72 Kortkamp, Fr., Berlin.—Legal and political books.
- 72<sup>a</sup> Kressner, L., Wurtzburg.—Surgico-pathological tables.
- 73 Kratzschmar, Fr., Leipsic.—Lithographs.
- 74 Langenscheid Publishing House, Berlin.—Dictionaries and school books.
- 74<sup>a</sup> Leipsic Gazette, Leipsic.—"Leipsic Gazette."
- 75 Lesimple, Adolf, Mayence.—Books.
- 76 Leukart, Breslau.—Medical works.
- 77 Lork, Carl B., Leipsic.—Books.
- 78 Lüderitz, C. G., Berlin.—Books.
- 78<sup>a</sup> Mauke, W., Leipsic.—Housebook.
- 79 Mayer, Edward Heinrich, Cologne.—Books.
- 80 Meinhold, C. C., & Sons, Dresden.—Anatomical atlas.
- 81 Meissner, Otto, Hamburg.—Books.
- 82 Meissner & Buch, Leipsic.—Lithographs, etc.
- 82<sup>a</sup> Mentzel, A., Leipsic.—Books.
- 83 Mey & Widmayer, Munich.—Art publications.
- 84 Müller, C. Ed., Bremen.—Books.
- 85 Naumann, C. G., Leipsic.—Job printing.
- 86 Naumann, Justus, Leipsic.—Biblical pictures.
- 87 Nicolai's Publishing House, Berlin.—Books.
- 89 Nitzschke, Wilhelm, Stuttgart.—Atlases.
- 89<sup>a</sup> Oehmigke's Publishing House, Leipsic.—School books, etc.
- 90 Paetel Bros., Berlin.—Books.
- 91 Perthes, Justus, Gotha.—Atlases, etc.
- 92 Peters, C. F., Bureau de Musique, Leipsic.—Music.
- 92<sup>a</sup> Polz, E., Leipsic.—Leipsic "Tageblatt."
- 93 Reimer, Dietrich, Berlin.—Maps, etc.
- 94 Röder, C. G., Leipsic.—Prints, etc.
- 95 Rommel, Wilhelm, Frankfurt-on-Main.—Illustrated heraldic works.
- 96 Römmler & Jonas, Dresden.—Prints.
- 97 Schlegel, Ernst, Aschersleben.—Art plates.
- 98 Schmidt, H. W., Halle-on-Saale.—Books.
- 98<sup>a</sup> Schmidt, Heinar., & Günther, Carl, Leipsic.—Books.
- 99 Schönfeld, G., Dresden.—Books.
- 101 Schotte & Co., Ernst, Berlin.—Globes, maps, etc.
- 102 Schreiber, I. F., Esslingen.—Picture books.
- 103 Schubert & Co., Leipsic.—Music.
- 104 Seemann, E. A., Leipsic.—Books.
- 105 Schulz, O. A., Leipsic.—Directory of German book trade.
- 105<sup>a</sup> Schwann, L., Neuss.—Publications.
- 105<sup>b</sup> Schulze, Oldenburg.—Books.
- 106 Siegmund & Volkening, Leipsic.—Educational literature.
- 108 Soenneken, Fr., Remscheid.—Writing books.
- 109 Spamer, Otto, Leipsic.—Books.
- 110 Spemann, W., Stuttgart.—Art works.
- 110<sup>a</sup> Spiller, Ph., Berlin.—Books.
- 111 Springer, Julius, Berlin.—Books.
- 112 Steinhaus, J. F., Bremen.—Bibles.
- 113 Storch & Kramer, Berlin.—Chromos.
- 115 Strumper & Co., Hamburg.—Prints.
- 117 Tauchnitz, Bernhard, Leipsic.—Publications.
- 118 Tegetmeyer, Ferd., Leipsic.—Wood engravings.
- 119 Trewendt, Eduard, Breslau.—Books and maps.
- 120 Velhagen & Clasing, Leipsic.—Illustrated journals, religious works, etc.
- 121 Veith, J., Karlsruhe.—Art publications.
- 122 Vogel, F. C. W., Leipsic.—Books.
- 123 Voss, Leopold, Leipsic.—Books.
- 123<sup>a</sup> Wachsmuth, F. E., Leipsic.—Animal pictures.
- 123<sup>b</sup> Waldow, A., Leipsic.—Books and periodicals.
- 124 Wagner, R., Berlin.—Plates.
- 125 Wagner, H., & Debes, C., Leipsic.—Plates and maps.
- 126 Weber, J. J., Leipsic.—Diaries, etc.
- 128 Weigel, T. O., Leipsic.—German and Latin works.

## Educational Appliances, Scientific and Musical Instruments, Clocks.

- 129 Westermann, George, Brunswick.—School books. 300
- 130 Wiegandt, Kempel, & Parey, Berlin.—Books on agriculture, etc. 302
- 131 Wigand, George, Leipzig.—Religious books, atlas, etc. 302
- 132 Wigand, Otto, Leipzig.—Dictionaries, year books. 302
- 133 Winter, C. F., Leipzig.—Illustrated works. 302
- 134 Wolf, Adolph, Dresden.—Illustrated journals and chromos. 302
- 135 Zahn, R. von, Dresden.—Books. 302
- 136 Zernin, Eduard, Darmstadt.—Works on military science. 302
- 137 Hermes, Wilhelm, Berlin.—Drawing instructor and studies. 300
- 138 Grothe, Hermann, Berlin.—Apparatus for instruction in technical schools. 302
- 140 Loeff, Paul, Berlin.—Books on furnaces, ovens, kilns, etc. 302
- 141 Raumer, C. V., Warmbrunn, Silesia.—Instruction book for the manufacture of bricks. 302
- 142 Blankenhorn, A., Karlsruhe.—Instruction books for wine growing and agriculture. 302
- 143 Zoological reviews. 306
- 143 Keller, Heinrich, Son, Darmstadt.—Herbarium of forest and field grasses. 302
- 144 Schröder, J., Polytechnic Industrial Institute, Darmstadt.—Models for teaching purposes, drawing appliances. 302
- 145 Lette Association, Commercial and Trades School, Berlin.—Placard relating to the labors of the Association. 302
- 146 Stenographical Society of Stolze, Berlin.—Books, reports, etc. 306
- 147 Mooser, W., Berlin.—Sundry literary works. 306
- 148 Bavarian Museum of Arts, Nuremberg.—Publications, communications, etc. 306
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- COLLECTIVE EXHIBIT OF NUREMBERG MATHEMATICAL INSTRUMENT MANUFACTURERS.** 300
- 152 Schoenner, Georg, Nuremberg. 300
- 153 Bayer, Jean, Nuremberg. 300
- 154 Heisinger, Ludwig, Nuremberg. 300
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- 155 Schäffer & Budenberg, Buckau.—Water gauges. 321
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- 196 Euler, A. A., Frankfurt-on-Main.—Clarionets, flutes, etc. 327
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- 202 Ibach, Rudolphe, & Son, Barmen.—Concert grand piano and piano. 327
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- 220 Central Committee of the Bavarian Association for nursing and aiding Wounded and Sick Soldiers in time of War.—Model of a fully-dressed and equipped member of the corps. 346
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- 223 Zuelser, Dr., Berlin.—Model of a hospital and ventilating apparatus, and sanitary statistics of Germany for 1874, etc. 346

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## AUSTRIA.

(South of Nave, Columns 23 to 28.)

## Educational and Engineering Appliances, Scientific Instruments.

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- 2 Fuchs, John Bapt., Emmerich, Gaming.—Artistic penmanship. 300
- 2a Delhez, Constantine, Vienna.—Gymnastics of the senses. 300
- 3 Brunn, Dr., Vienna.—Plaster cast of the human face. 302
- 5 Politzer, Adam, Vienna.—Anatomical, pathological preparations of the organs of hearing. 302
- 8 Pechar, John, Teplitz, & A. Pees, Vienna.—Statistics of the import, export, and consumption of cotton in Austria in 1871. 305
- 9 Lehmann, Adolf, Vienna.—Residence and business directory. 306

## Institutions and Organizations.

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## Scientific and Philosophical Instruments and Methods.

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- 14 Kreidl, Alois, Prague.—Chemical and physical apparatus for schools. 320
- 16 Kreuter, Franz, Brunn.—Tachometer, distance poles, leveling poles. 320
- 18 Lenoir & Forster, Vienna.—Chemical, physical, and mineralogical apparatus. 320
- 17 Paugger, F., Trieste.—Nautical instruments. 320
- 18 Florens, Joseph, Vienna.—Scales and balances, gold and silver precision balances, balance scales, table balances. 322
- 19 Schmidt, John, Vienna.—Measuring and regulating apparatus for petroleum. 322
- 23 Richter, C.W., Oedenburg.—Optical instruments, spectacles. 324
- 23 Pissel, S., & Co., Vienna.—Mechanical and optical instruments. 324
- 24 Kiendl, A., Vienna.—Ciberna. 327
- 25 Cerveny, V. F., Koniggratz.—Musical instruments of wood and metal. 327
- 26 Bohland & Fuchs, Graslitz.—Metal instruments. 327
- 27 Fuchs, Daniel, Vienna.—Metal instruments. 327
- 28 Parsky, John F., Pardubitz.—Wind instruments. 327

- 31 Lausmann, John W., Lins.—Wood and metal wind instruments. 327
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- 43 Battig, Anton, Chief Engineer of the State Railroad Co., Vienna.
- 44 Bayer, Rudolph, Vienna.
- 45 Bomches, Fred., Trieste.
- 46 Claus, Heinrich & Gross, Vienna.
- 47 Fellner, Fred., & Hermann Helmer, Vienna.
- 47a Friedmann, Alex., Vienna.
- 48 Doderer, Wilh., Vienna.
- 49 Danube Regulation Commission, Vienna.
- 49a Helmer, Hermann, Vienna.
- 50 Dorfel, Julius, Vienna.
- 51 Hornig, Dr. Emil J. R., Vienna.
- 51a Rsiha, Franz, Vienna.
- 52 Ferstel, Heinr. Ritter von, Vienna.
- 53 Flattich, Wilh., & Wilhelm Franz, Vienna.
- 54 Schmidt, Heinrich, Inspector-General of the State Railroad Co., Vienna.
- 55 Forster, Emil Ritter von, Vienna.
- 56 Fraenkel, Wilh., Vienna.
- 57 Gaertner, Ernst, Vienna.
- 58 Gross, E., Vienna.
- 59 Hansen, Theophil Ritter von, Vienna.
- 60 Hintrager, Moritz, Vienna.
- 61 Hlubek, Peter, Vienna.
- 62 Holder, Alfred, Vienna.
- 63 Schmoranz, Franz, Vienna.
- 64 Klein Bros., Vienna.
- 65 Klunsinger, Paul, in Belinzona.
- 66 Delhez, Constantine, Vienna.
- 67 Lazar, Adolph, Vienna.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Engineering Designs, Commercial and Industrial Statistics.

- 68 Lehmann & Wentzel, Vienna.
- 69 Loh., August Ritter von, Vienna.
- 70 Frankl, Ludwig August, Vienna.
- 71 Morawitz, Moriz, Vienna.
- 73 Obach, Theodore, Vienna.
- 74 Paradeiser, W., Pola.
- 75 Neitsche, R., Olmütz.
- 76 Popovits, Lazar, Marchegg.
- 77 Schachner, Friedrich, Vienna.
- 78 Rumpelmayer, Victor, Vienna.
- 79 Schlömp, Carl, Vienna.
- 80 Schmidt, Friedr., Vienna.
- 81 Schmidt, Heinrich, Vienna.
- 82 Schmoll, Adolph von, Eisenwerth.
- 83 Schon, John George, Brunn.
- 84 Schrabets, Emil, Vienna.
- 85 Serres, August de, Vienna.
- 86 "Stadtbaupamt of Vienna."
- 87 Tilp, Emil, Vienna.
- 88 Pechar, Johann, Teplitz.

- 90 Waldheim, R. von, Vienna.
- 91 Wentzel, Vienna.
- 93 Wilhelm, Franz, Vienna.
- 94 Winkler, Dr. Emil, Vienna.

- 95 Bader, F. W., Vienna.—Design of the city of Vienna. 335

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- 96 Commission in Vienna for the Philadelphia Exhibition, Vienna.—Graphical representation of the productions and foreign commerce of Austria, of its savings banks, etc. 343
- 96a Frankl, Lewis A., Vienna.—Plans and descriptions of the Institute for the Blind in Vienna. 346
- 97 First Ordinary Civil Social Union of the Austro-Hungarian Monarchy, Vienna.—Representation of the activity and development of co-operative union of the Austro-Hungarian monarchy. 347

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# SWITZERLAND.

(North of Nave, Columns 52 to 55.)

## Books, Educational Appliances, Statistics.

### Educational Systems, Methods, and Libraries.

- 1 Board of Education of the Canton of Appenzell Ausserrhoden.—Laws and regulations, books, maps, and plans. 300
- 2 Board of Education of the Canton of Basle City.—Annual accounts of the department of public instruction, reports and prospectus of the schools, school-books, plans of the Bernoullianum, special schools. 300
- 3 Board of Education of the Canton of Berne.—Obligatory and facultative text books and apparatus used in elementary and higher schools, laws and regulations, reports and plans. 300
- 4 Board of Education of the Canton of Fribourg.—Laws and regulations, books, maps, and plans. 300
- 6 Board of Education of the Canton of Geneva.—Obligatory and facultative text books and apparatus used in elementary and higher schools, laws and regulations, reports and plans. 300
- 6 Board of Education of the Canton of Lucerne.—Laws and regulations, books, maps, and plans. 300
- 7 Board of Education of the Canton of Neuchâtel.—Laws and regulations, books, maps, and plans. 300
- 8 Board of Education of the Canton of Solothurn.—Laws and regulations, books, maps, and plans. 300
- 9 Board of Education of the Canton of Zurich.—Obligatory and facultative series of books and apparatus used in elementary and higher schools, models and maps for instruction in drawing, laws and regulations, reports and plans. 300
- 10 Kindergarten, St. Gallen.—Collection of work and employments for children; "the education of children according to Froebel's principles," by J. Wellauer, director of the orphan asylum St. Gallen, 1875, annual reports, statutes, and prospectus. 300
- 11 Beust, F., Hottingen, near Zurich.—Educational system, constructive method, for children of five to twelve years, text books, maps, models, apparatus, and pupils' work in mathematics, geography, and natural history. 300
- 12 Zollikofer Female Seminary, Romanshorn, Ct. Thurgau.—Publications, manuscripts, album of works executed by pupils. 300
- 13 Bachmann, Franz, Winikon, Ct. Lucerne.—Intuitive principle of instruction, tables and appliances. 300
- 14 Ferri, Felix, Lugano, Ct. Tessin.—Tables and album for the drawing of architectural ornaments. 300
- 15 Ganz, J., Zurich.—Photographs of microscopic preparations for instruction in natural sciences. 300
- 16 Hindermann & Siebenmann, Zurich.—Illustrations for little children, M. Staub's method. 300
- 17 Göttinger, Dr. E., St. Gallen.—Systematic course of topographical drawing. 300
- 18 Hofer, J. J., Zurich.—Korrod's copy writing-books. 300
- 19 Kaiser, Dr., St. Gallen.—Table for instruction in chemistry. 300
- 20 Keller, Heinrich, Zurich.—Large school map of Switzerland. 300
- 20a Lussy, Mathis, Stanz, Ct. Unterwalden.—Systematical course for musical studies. 300
- 21 Unterstrass Modeling School, near Zurich.—Pupils' work in modeling. 300
- 22 Paroz, J., Peseux, Ct. de Neuchâtel.—History of pedagogy, elementary instruction, intuitive multiplication table, table for the learning of fractions. 300
- 23 Rikli, Carl, Wangen, Ct. Berne.—Historical and chronographical tables. 300
- 24 Stierlin, Dr. R., Lucerne.—Model of the glacier garden at Lucerne. 300
- 25 Steidinger, J., Therwyl, Ct. Basle-Land.—Writing-copies for the French ronde. 300
- 26 Zwicky-Laager, C., Mollis, Ct. Glarus.—Atlas of drawings for elementary schools. 300
- 27 Largiadèr, Rorschach, Ct. St. Gallen.—School-bench with movable reading-desk. 300
- 28 Saint George, W. H., de Nyon, Ct. de Vaud.—Treatise on the construction and hygiene of school-houses. 300
- 29 Agricultural & Professional Colony of Suisse romande, Serix, near Oron, Ct. de Vaud.—Statutes. 302
- 30 Free School for Apprentices, St. Gallen.—Report of the institution, selection of pupils' work. 302
- 31 Industrial School Association, Zurich and vicinity.—First report, 1875. 302
- 32 Asylum for Girls, B. Rittmeyer & Co., St. Gallen.—Reports, 1869-1873. 302
- 33 Dairy Station, Lausanne, Mont Riond, Canton de Vaud.—Collection of writings on dairying and on Alpine cultivation. 302

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Educational Appliances, Statistics, Reports, Scientific Instruments.

- 34 Drawing School of the Board of Trade, St. Gallen.—Competition works of pupils, album of drawings by pupils, school report. 303
- 35 Blind Asylum, Lausanne, Ct. Vaud.—General regulations, Lausanne, 1864; reports, 1873-1874. 303
- 36 Private Blind Asylum, Berne.—Statutes, Berne, 1874; constitutional report, 1862; annual reports, 1861 to 1874. 303
- 37 Deaf & Dumb Asylum, Canton Vaud, Moudon.—Regulations, 1874. 303
- 38 Institution for Deaf Mutes, Aarau, Ct. Aargau.—Report, 1874. 303
- 39 Institution for Deaf Mutes, Riehen, near Basle.—Prospectus, reports, and accounts, 1874; list of lessons, 1875-1876; view of the establishment; travels, by G. Jörgensen; courses of study and appliances of instruction. 303
- 40 Institution for Deaf Mutes, St. Gallen.—Statutes of the Society for the Education of Deaf and Dumb Children, annual reports, 1873-1875. 303
- 41 Institution for Feeble-minded Children, Weissenheim, near Berne.—Annual reports, Berne, 1869 and 1872. 303
- 42 Federal Statistical Office.—Statistics of public instruction in Switzerland, by H. Kinkelin. 304
- 43 Federal Polytechnical School, Zurich.—Report on the organization, laws, and regulations, plans of the localities. 304
- 44 Christen, J. J., Aarau.—Manuals for instruction, school books. 306
- 45 Delp, J., Berne.—Manuals for instruction, school books. 306
- 46 Hitz, Chur, Ct. Graubünden.—Manuals for instruction, school books. 306
- 47 Huber, Jacques, Frauenfeld.—Pedagogical reviews, school books, drawing, musical works, agricultural instruction. 306
- 48 Meisel, C. J., Herisau, Ct. Appenzell, Inner Rhodes.—Manuals for instruction, school books. 306
- 49 Orell, Füssli, & Co., Zurich.—Manuals for instruction, school books. 306
- 50 Sauerländer, H. R., Aarau, Ct. Aargau.—Manuals for instruction, school books. 306
- 51 Scheltlin & Zollikofer, St. Gallen.—Collection of manuals, books of instruction, maps. 306
- 52 Shulthess, Friedr., Zurich.—Manuals for instruction, school books. 306
- 52a Sonderegger, Y. Y., St. Gallen.—Manuals for instruction. 306
- Institutions and Organizations.**
- 53 Federal Statistical Office.—The savings banks of Switzerland, by J. L. Spyri, statistics of the newspapers in Switzerland, by Kinkelin; history of the schools of the Canton of Berne, by J. J. Kummer. 311
- 54 Swiss Geodetical Commission.—Determination of longitudes, determination of pendulum-lengths, leveling of Switzerland. 311
- 55 Swiss Geological Commission.—Geology and geological maps of Switzerland. 311
- 56 Swiss Meteorological Commission.—Meteorological observations. 311
- 57 Swiss Statistical Society.—The mutual relief societies of Switzerland in 1865, by H. Kinkelin; the public libraries in Switzerland in 1868, by E. Heitz. 311
- 58 Swiss Society for the Advancement of Natural Philosophy.—New memoirs, minutes, and reports; history of the society, statutes, list of members. 311
- 59 Swiss Historical Society.—List of documents on Swiss history, archives of Swiss history, indicator for Swiss history (informant). 311
- 60 Swiss Alpine Club.—Annual reports, itineraries, maps. 311
- 61 Association of the Canton of Aargau for the Advancement of Natural Philosophy.—The scarcity of water in the Canton of Aargau, paper read at the 50th session, map of erratic blocks. 311
- 62 Historical Society, St. Gallen.—Reports, annual papers. 311
- 63 Society for the Advancement of Natural Philosophy, Basle.—Proceedings 1867-1873, paper read at the 50th anniversary. 311
- 64 Society for the Advancement of Natural Philosophy, Berne.—Proceedings 1843-1874. 311
- 65 Society for the Advancement of Natural Philosophy of the Canton of Graubünden.—Annual reports, statutes, papers on natural sciences. 311
- 66 Society for the Advancement of Natural Philosophy of the Canton of St. Gallen.—Reports and proceedings 1868-1874, and speech at the 50th anniversary by Dr. Wartmann. 311
- 67 Observatory, Neuchâtel.—Reports and divers papers, photographs of astronomical instruments. 311
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- 68 Gysi, Fr., Aarau, Ct. Aargau.—Complete collection of mathematical drawing instruments. 320
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- 70 Hipp, M., Neuchâtel.  
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- 71 Kern, J., Aarau, Ct. Aargau.—Swiss drawing instruments, transits, theodolites, leveling instruments. 320
- 72 Amaler-Laffon, J., Schaffhausen.—Planimeters, integrators, Woltmann's current meter with electrical indication. 322
- 73 Aebi & Landry, Madretsch, near Bienne, Ct. de Berne.—Watches and pieces showing the successive phases of the fabrication. 323
- 74 Watch-makers Union (J. B. Goudy & Co.), Chaux-de-Fonds, Ct. Neuchâtel.—Gold and silver watches. 323



Watches, Jewelry, Musical Instruments, Engineering Designs.

- 76 Antony-Bovy, J. E., Chaux-de-Fonds, Ct. Neuchâtel.—Watch-hands, stems, rings, detached parts for stem-winders, steel cogwheels. 323
- 76 Aubert Bros., Savagnier, Ct. Neuchâtel.—Springs for watches. 323
- 77 Andemars, Ls., Brasses, Ct. Vand.—Watches and chronometers. 323
- 78 Badollet, J. M., & Co., Geneva.—Watches and pocket chronometers. 323
- 79 Bâhni Bror., Bienne, Ct. Berne.—Hairsprings: steel, tempered. 323
- 80 Berlic, Edouard, Geneva.—Lamina of hardened steel for lithographic pens and springs of watches. 323
- 81 Besancet-Blanc, Eug., Travers, Ct. Neuchâtel.—Ruby jewels for watches, cap jewels, jewelring of a repeating watch, two bridges with jewels set in gold, duplex rollers, English style; impulse jewels for chronometer escapements, cylinders and plugs. 323
- 82 Bitterlin-Schmidt, J. B., Locle, Ct. Neuchâtel.—Precious stones and jewels for jewelers and watch manufacturers, diamond powder. 323
- 83 Borel & Courvoisier, Neuchâtel.—Chronometers, watches, and movements of watches. 323
- 84 Breting Bros., Locle, Ct. Neuchâtel.—Pocket chronometers, lever escapement, spring, with Philipp's system of double-curve. 323
- 85 Fleischmann, Fritz, Pignet, & Co., Geneva.—Tempered steel for spirals. 323
- 86 Huguenin, A., & Son, Locle, Ct. Neuchâtel.—Watches, chronometers, and detached pieces. 323
- 87 Celliot Désiré, St. Imier, Ct. Berne.—Silver watches. 323
- 88 Corcelle, J., & Co., Geneva.—Enamel watch-dials. 323
- 89 Didisheim, Gabriel, St. Imier, Ct. Berne.—Watches. 323
- 90 Ducommun, D., Gorgier, Ct. Neuchâtel.—Movements of watches, stem-winders and key-winders. 323
- 91 Dufaux, Lutz, & Son, Geneva.—Watch spirals. 323
- 92 Ekgrén, Hr., Geneva.—Chronometers. 323
- 93 Favre Bros., Neuveville, Ct. Berne.—Watches of silver and German silver. 323
- 94 Franchillon, Ernest, & Co., St. Imier, Ct. Berne (Longines Watch Co.).—Watches, watch movements, detached pieces for key and stem-winders. 323
- 95 Frankfeld, Louis, & Co., Geneva.—Chronographs, star-watches, movements, patent stem-winders. 323
- 96 Grandjean, Hry., & Co., Locle, Ct. Neuchâtel.—Marine and pocket chronometers, watches. 323
- 97 Grandjean-Perrenoud, Henry, Chaux-de-Fonds, Ct. Neuchâtel.—Engravings for watches. 323
- 98 Honegger, G., Bienne, Ct. Berne.—Movements of platina, nickel, and parts of watches. 323
- 99 Humbert, Ernest, Locle, Ct. Neuchâtel.—Watches. 323

- 100 Jacot Bros., Locle, Ct. Neuchâtel.—Pocket chronometers. 323
  - 101 Jeanjaquet, Cha., Neuchâtel.—Springs for watches, steel for lithographic pens. 323
  - 102 Klein, E., Geneva.—Springs for watches. 323
  - 103 Ingold, P. F., Chaux-de-Fonds, Neuchâtel.—Cutters for giving the teeth of watch wheels the true form. 323
  - 104 Martin, Ch., & Co., Geneva.—Geneva watches, stem-winders. 323
  - 105 Matile, H. Ls., Locle, Ct. Neuchâtel.—Precision watches. 323
  - 106 Leuenberger & Son, Sumiswald, Ct. Berne.—Clocks and regulator. 323
  - 107 Montandon, C., Gentil-Lutz, Servette, near Geneva.—Tempered steel for spirals. 323
  - 108 Nardin, James, Locle, Ct. Neuchâtel.—Pocket chronometers, precision watches. 323
  - 110 Patek, Philippe, & Co., Geneva.—Pocket chronometers and watches. 323
  - 111 Perrenoud, Almé, Terreaux, Geneva.—A constant force escapement for chronometers, assortment of spirals of gold and tempered steel. 323
  - 112 Perret's, D., Son, Neuchâtel.—Watches. 323
  - 113 Rauss, Ami, Geneva.—Enameled dials for watches. 323
  - 114 Rigrup, R. S., Locle, Ct. Neuchâtel.—New mechanism for Lepine watches without fusée. 323
  - 117 Stahl, Maurice, Chaux-de-Fonds, Ct. Neuchâtel.—Chronometers and watches. 323
  - 118 Taglieb, Carl, Zurich.—Watch in a finger-ring. 323
  - 119 Jaques, Adank J., & Co., Ste. Croix, Ct. Vaud.—A musical box, mandoline, with zither. 327
  - 120 Brémont, B. A., Geneva.—Musical boxes. 327
  - 121 Karrer & Co., Teufenthal, Ct. Aargau.—Musical boxes and fancy articles. 327
  - 122 Karrer, S., Teufenthal, Ct. Aargau.—Musical boxes. 327
  - 123 Paillard, C., & Co., Ste. Croix, Ct. Vaud.—Musical boxes with vocal attachments. 27
  - 125 Trost, J., & Co., Zurich.—Upright piano forte. 327
- (Machines and tools pertaining to watch-making are also exhibited in this department, but classified under Class 535.)

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- 128 Building Direction of the Canton of Aargau.—System of roads, wooden bridges, canals, water-power. 330
- 129 Building Inspection of the Canton of Graubünden.—Correction of the Rhine in the Grisons. 330

## Engineering and Architectural Designs.

- 130 Department of the Interior, Swiss Confederation, Berne.—Measures taken to correct and regulate the rivers and waters of Switzerland. 330
- 131 Department of Public Works, Canton of Vaud.—Public works, cost of various roads, drawings of objects of art. 330
- 132 Department of Public Works of the Canton of Berne.—Plans, maps, atlases, literary works, bridges for public roads, correction of rivers of the Jura mountains. 330
- 133 Swiss Society of Engineers & Architects.—The Swiss system of roads, iron bridges, water supply and canalization in Swiss towns. 330
- 134 Municipality of Chaux-de-Fonds, Ct. Neuchâtel.—Plans of the town of La Chaux-de-Fonds, 1794-1841, and for its enlargement. 330
- 135 Government of the Canton of St. Gallen.—System of roads and highway bridges, correction of the Rhine. 330
- 136 Rothenbach, Director of the City Gas and Water Works, Berne.—Gas works of Berne. 330
- 137 Rieter, Joh. Jacob, & Co., Winterthur, Ct. Zurich.—Photographs of turbines, with accessories, and of wire-rope transmissions. 331
- 138 Weissenbach, W. C. E., Zurich.—The water-powers of Switzerland. 331
- 139 Department of Railroads & Commerce, Swiss Confederation, Berne, Bureau of Statistics.—Statistics of Swiss railways. 332
- 140 Department of Railroads & Commerce, Swiss Confederation, Berne, Scientific Bureau.—Standard drawings, forming part of the government regulations for Swiss railways. 332
- 141 Department of Railroads & Commerce, Swiss Confederation, Berne, Gothard Inspection.—Report of the Gothard railway, geological tables and sections. 332
- 142 Railroads of Jura-bernoise.—Photographs of railway works, general plan and longitudinal sections, railway construction, Zimmeregg tunnel. 332
- 143 Gothard Railway Co.—Longitudinal sections of the line and tunnel, plans, collection of specimens of the most important rocks found in the great tunnel. 332
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- 186 Swiss Society for Promoting the Public Welfare.—History, Swiss periodical for public utility. 346
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- 195 Swiss Society for Instructing the Poor.—Descriptions of the asylums for the poor, minutes, report of the Society of Teachers for the Poor. 346
- 196 Society for Instructing the Poor, District of Aarau, Ct. Aargau.—Statutes, programmes, contracts, annual reports. 346
- 196a Building Direction, Canton Aargau.—Plans of the lunatic asylum at Königsfelden. 346
- 197 Institution for Instructing the Poor, Canton Basle-Land.—General report. 346
- 197a Department of Public Works of the Canton Vaud.—Plans of the lunatic asylum at Lausanne. 346
- 197b Department of Public Works, Canton Zurich.—Plans of the lying-in hospital at Zurich. 346
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- 199 Home Industry Society for Zurich and Vicinity.—Report, statutes, regulations. 346
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- 205 Orphan Asylum, Neuchâtel.—Reports, contracts, formulas; notes about Belmont. 346
- 206 Orphan Asylum, Dailens-Cossonay-Penthaz, Ct. Vaud.—Regulations and reports. 346
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- 208 Orphan Asylum, Basle.—Description and history, annual reports, publications, plans, and views. 346
- 209 Orphan Asylum, St. Gallen.—The orphan asylum in St. Gall by F. von Tschudi, reports, statutes, plans of buildings, etc. 346
- 210 City Orphan Asylum, Zurich.—Reports, statutes, regulations, photographs, samples of pupils' clothing. 346
- 211 Aargau Reformatory, Olisberg, Ct. Aargau.—Reports. 346
- 212 Grube Institution for Instructing the Poor, Ct. Berne.—Specimens of pupils' work. 346
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- 214 Hosang Foundation, School for the Poor, near Chur.—Regulations for the admission of pupils into the establishment. 346
- 215 Bunsdner Reformatory, Foral, near Chur, Ct. Graubünden.—Annual reports of the orphan asylum. 346
- 216 Friedeck Reformatory Home, Buch, Hegau, Ct. Schaffhausen.—Historical report, specimens of pupils' work. 346
- 217 Swiss Reformatory, Sonnenberg, near Lucerne.—Statutes, circulars, reports, specimens of pupils' work, etc. 346
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- 319a** Young Merchants Union of Switzerland.—General report of proceedings. 347

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- 221** Abplanalp, J., Brienz, Ct. Berne.—Wood-carvings. 405

- 222** Baumann, A. Vater & Son, Brienz, Ct. Berne.—Wood-carvings. 405

- 223** Bergen, C., von, & Co., Interlaken, Ct. Berne.—Wood-carvings. 405

- 224** Eggler, Jakob, Brienz-Oberdorf, Ct. Berne.—Wood-carvings. 405

- 225** Eggler, Johann, Brienz, Ct. Berne.—Wood-carvings. 405

- 226** Flück, J., Fluhberg, near Brienz, Ct. Berne.—Wood-carvings. 405

- 227** Germann & Eggler, Brienz, Ct. Berne.—Wood-carvings. 405

- 228** Grossmann, Joh., Ringgenberg, near Interlaken, Ct. Berne.—Wood-carvings. 405

- 229** Jäger, Jb., & Co. Brienz, Ct. Berne.—Wood-carvings. 405

- 230** Imboden Bros., Ringgenberg, near Interlaken, Ct. Berne.—Wood-carvings. 405

- 231** Klein, J. F., & Son, Meiringen, Ct. Berne.—Wood-carvings. 405

- 232** Sterchi, Fritz, Interlaken, Ct. Berne.—Wood-carvings. 405

- 234** Zumbrunn, Schmoker, & Co., Ringgenberg, Interlaken, Ct. Berne.—Wood-carvings. 405

## Painting.

- 235** Glardon, C. L., Geneva.—"The Morning" (after Greuze); enamel for a watch, of Badollet's exhibition. (See No. 78, p. 355.)

## Engraving and Lithography.

- 236** Rieter-Biedermann, J., Winterthur, Ct. Zurich.—Printed music and engravings. 421

- 237** Bonnet, Charles, & Co., Geneva.—Types, borderings, ornaments cut in wood, for printers and lithographers. 422

- 238** Bonfantini, G. A., Basle.—Typographical album, dedicated to the printers of Philadelphia. 422

- 239** Meyer, Theodor, Schaffhausen.—Wood-cuts. 422

- 240** Westföhring, J., Winterthur, Ct. Zurich.—Catalogue, Swiss section. 422

- 241** Orell, Füssli, & Co., Zurich.—Letterpress plates, chemical engraving, wood engravings reduced, plates for paper money, sample sheets and books. 423

- 242** Hindermann & Siebenmann, Zurich.—Chromo-lithographs. 424

- 243** Kallist, Caspar, Zurich.—Chromo-lithographs. 424

## Photography.

- 244** Charnaux, F., Geneva.—Photographs of the glaciers of Switzerland. 430

- 245** Ganz, J., Zurich.—Photographs. 430

- 246** Gut, Jean, & Co., Zurich.—Photographs. 430

- 247** Linck, J., Winterthur, Ct. Zurich.—Photographs. 430

- 248** Nicola-Karlen, Emil, Berne.—Swiss photographs. 430

- 249** Richard, T., Son, Männedorf, Ct. Zurich.—Album of photographs, Swiss costumes, Swiss myths and traditions, Swiss landscapes. 430

- 250** Simona, Giorgio, Locarno, Ct. Tessin.—Photographs. 430

- 251** Tschöler Bros., St. Fiden, near St. Gallen.—Photographs. 430

- 252** Zacher, C., Zurich.—Photographs. 430

## Machines for Making Watches.

- 253** Servet, J. Marc, Son, Geneva.—Tools and instruments for watchmakers and jewelers. 535

- 254** Borel-Petitpierre, Ls., Couvet, Ct. Neuchâtel.—Tools and instruments for watch manufacturing. 535

- 255** Grobet, François Louis, Vallorbes, Ct. Vaud.—Tools and instruments for watch manufacturing. 535

- 256** Keigel, Auguste, Couvet, Ct. Neuchâtel.—Equalizing machine, lathes, tool for forging wheels, deepening tool. 535

- 257** Leresche-Golay, Jules, & Co., Vaulion, Ct. Vaud.—Files, tools, and instruments for watch manufacturing. 535

- 258** Vautier, St., & Sons, Carouge, near Geneva.—Tools and instruments for watch manufacturing and for jewelers. 535

- 259** Berliet, Edouard, Geneva.—Tools and gravers. 535

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## BELGIUM.

(North of Nave, Columns 54 to 59.)

## Educational Books and Appliances, Scientific Instruments.

## Educational Systems, Methods, and Libraries.

- 1 Arens, Antoine, Namur.—School books. 300
- 2 Crevecoeur, Henri Stanislas Joseph, Orp-le-Grand (Brabant).—Statistical lists for school teachers. 300
- 3 Genonceaux, Louis, Bruges.—School books. 300
- 4 Belgian Government Educational Department.—Type of school furniture approved by the Belgian government. 300
- 5 Happel, J., Antwerp.—Adjustable desk, perambulators. 300
- 6 Landrien, Bernardin, Mechlin.—School books. 300
- 7 Licot, Feuillien, Nivelles (Brabant).—Work on drawing. 300
- 8 Lory-Delaet, Pierre, Brussels.—Writing method adopted by the Belgian government. 300
- 9 Petry, Adolphe, Mons (Hainaut).—Arihmmometer. 300
- 10 Stebert, Pierre, Tongres, Limbourg.—Essay on education, etc. 300
- 11 Van Havermaet, Henry, Brussels.—Furniture used in orphan asylums. 300
- 12 Claesen, Ch., Liège.—Works on art. 302
- 13 Collinet, Ed., Brussels.—Work on art. 302
- 14 Stroesser, Jean-Pierre, Brussels.—Solids represented in profile by metallic wire. 302
- 15 Van der Molen, A., & Co., Brussels.—Works on architecture and sculpture. 302
- 16 Leboe, Leon, Brussels.—Educational works. 306
- 17 Dessain, H., Mechlin, Province of Antwerp.—Prayer, liturgy, and other books. 306
- 18 Du Fief, J., Brussels.—School books on geography. 306
- 19 Callewaert Bros., Brussels.—School books, Callewaert's dictionaries. 306
- 20 De Cuyper, C., & Noblet, A., Liège.—Works on mining, etc. 306
- 21 De Koninck, Laurence Wm., Liège.—Works on paleontology. 306
- 22 Dextexhe, A. M. T. J., Modave, Province of Liège.—Works on instruction. 306
- 23 Dujoux, J. B. C., Brussels.—Special collection of patents. 306
- 24 Landrien, Bernardine, Mechlin.—School books. 306

- 25 Manceaux, Hector, Mons (Hainaut).—School books. 306
- 26 St. Nicolas, Ch., East Flanders.—School books. 306
- 26 Mees, Jules, Brussels.—Belgian "Industrial Monitor" (newspaper). 306
- 27 Van Holsbeek, Henry, Brussels.—Works on hygiene. 306

## Institutions and Organisations.

- 28 Educational Union, Brussels.—Works on instruction. 310
- 29 Doings of Popular Evening Parties of Verviers, Verviers.—Publications, etc. 310
- 30 Toekomst Society, Antwerp.—Reports, etc. 310
- 31 Maelen, Joseph van der, Molenbeek St. Jean, near Brussels.—Geographical works. 310
- 32 Namur Artistic Literary Club, Namur.—Annals of the Club. 311
- 33 Entomological Society of the Royal Museum of Natural History of Belgium, Brussels.—Reports, etc. 311
- 34 Limbourg Scientific & Literary Society, Limbourg.—Publications. 311
- 35 Artists' Union, International Club of Fine Arts, Liège.—Statutes, etc. 311
- 36 Morning Star Royal Society, Brussels.—Dramatic, literary, and choral works. 313
- 37 Meerens, Charles, Brussels.—Music and musical works. 313

## Scientific and Philosophical Instruments and Methods.

- 39 Le Boulengé, Paul Emile, Liège.—Telemeter for the battle-field. 321
- 40 Linglin, Edward, Charleroi.—Centrifugal power regulator. 321
- 41 Majolini, Francis, La Louvière (Hainaut).—Platform scale for railroads. 322
- 42 Carotte Dobbels, D., Meulebeke, near Courtrai, West Flanders.—Lighting rod without joints. 322
- 44 Mahillon, C., Brussels.—Wind instruments. 327

## Engineering, Architecture, Maps, etc.

- 47 Tellier, Adolphus Le, Saint Gilles, near Brussels.—Filters. 330
- 51 Malaise, C. H. O. L., Gembloux.—Agricultural chart. 333

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Physical Development, Benevolent and Industrial Associations.

## Physical, Social, and Moral Condition of Man.

- 52 Dries, Lois Francis, Saint Gilles, near Brussels.—Gymnastics at primary and ward schools, etc. 340
- 53 Schmitz, Peter, Liège.—Treatises on gymnastics. 340
- 54 Brussels Gymnastic Association, Brussels.—Statutes. 340
- 56 Relief Association for the Needy.—Statutes and annual reports. 346
- 57 Boniotti, Peter, Brussels.—Document relating to the association for free medical assistance. 346
- 58 Royal Society for the Prevention of Cruelty to Animals, Brussels.—Publications, etc. 346
- 59 Warlomont, Dr., Brussels.—Vaccine and its distribution to physicians. 346
- 59a Manufacturers' Joint Stock Co., St. Nicholas, East Flanders.—Statutes. 347
- 60 Permanent Commission of Mutual Relief Associations, Belgium.—Reports, etc. 347
- 61 Laurent, Francis, Ghent.—Works on the improvement of the working classes. 347
- 62 Mechlin Savings Bank, Mechlin.—Reports, etc. 347
- 63 Schoenfeld, H., Brussels.—Reports, etc., of the Belgian Medical Profession Pension Fund. 347
- 64 Grivegnée Co-operative Expenditure Society, Grivegnée, near Liège.—Reports, etc. 347
- 65 Mutual Commercial Co., Brussels.—Reports, etc. 347
- 66 Commercial & Industrial Mutual Co., Ghent.—Reports, etc. 347
- 67 Mutual Benefit Association, Xhenedracl, near Liège.—Reports, etc. 347
- 68 Roelens, Désiré, Ghent.—Plan of a hot-house heating apparatus, with thermosyphon. 715
- 69 Smits, Constantine, Forest, near Brussels.—Model of a park, bird's-eye view, leveling, etc. 730

## NETHERLANDS.

(North of Nave, Columns 60 to 65.)

## Educational Books and Appliances, Statistics.

## Educational Systems, Methods, and Libraries.

- 1 Tjeenk-Willink, H. A., Arnhem.—Earth globes with zinc balls. 300
- 2 The Book Trade, Amsterdam.—Books, school books, newspapers, and periodicals. 300
- 3 Deuten, L., Groningen.—Paper blackboard. 300
- 4 Artisans' School, Rotterdam.—Drawings and designs. 300
- 5 Kolkow, F. J. von, Groningen.—Photographs on glass. 300
- 6 Workmen's Artisans' School, Amsterdam.—Drawings. 302
- 7 Verhaar, A. T., Utrecht.—Plaster casts of cattle that died of murrain in 1865. 302
- 8 Workmen's Society, Amsterdam.—Drawings by pupils. 302
- 9 Deaf & Dumb Institute, Groningen.—Reports, 1790-1875. 303
- 10 Blind Institute, Amsterdam.—Means of instruction for the blind, and articles made by pupils. 303
- 11 Serraris, P. A., jr., Geertruidenberg.—Writing apparatus for weak-sighted. 303
- 12 Mulder, L., Arnhem.—Periodicals. 306

## Institutions and Organisations.

- 13 Dutch Scientific Society, Haarlem.—Treatise on natural science; archives of the Netherlands. 310
- 14 Teyler's Foundation, Haarlem.—Archives of the Teyler von der Halst Museum. 310
- 15 Society for the Promotion of Architecture, Amsterdam.—Works on architecture. 311
- 16 Dutch Association for the Encouragement of Industry, Haarlem.—Periodicals published by the Association. 311
- 18 Krelage, J. H., Amsterdam.—Pamphlets. 312
- 19 Dutch Horticultural & Botanical Association, Amsterdam.—Pamphlets. 312
- 20 Amersfoort, Mrs. H. M., Badhoeva.—Oratorio—"God's Ubiquity." 313
- 21 Gelder, G. M. van, Schaerbeek.—Piano forte method. 313
- 22 North Netherlands Musical & Historical Association, Amsterdam.—Publications. 313

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

Scientific Instruments, Engineering, Benevolence, Machinery.

23 Roothaan, L., Amsterdam.—Musc. 313

Scientific and Philosophical Instruments and Methods.

24 Harting-Bank, H. J., Utrecht.—Scientific instruments. 320

25 Ministry of Finance, Hague.—Scientific instruments. 320

26 Olland, H., Utrecht.—Meteorological instruments. 320

27 Kerbel, G. H., Amsterdam.—Model of a steam engine. 320

28 Weteren, M. van, Haarlem.—Mag. nets. 320

30 Muller, J. A., Amsterdam.—Water gauge. 321

31 Beton, P. J. in de, Delft.—Instrument measuring tooth part of a millimetre. 321

33 Hohwü, A. & T., Amsterdam.—Chronometers and astronomical clock work. 323

33 Casseres, A. de, Amsterdam.—Chronometers and astronomical clocks. 323

34 Cuypers, J. F., Hague.—Piano. 327

Engineering, Architecture, Maps, etc.

35 Ministry of the Interior.—Collection of public works of the Netherlands. 330

36 Amsterdam Canal Co., Amsterdam.—Chart of the channel to the North Sea. 330

37 Chambers of Commerce & Industry, Middleburg & Flushing.—Relief chart of harbor. 330

38 Polytechnic School, Delft.—Models of lock gates. 330

39 Morre, G. J., Delft.—Drawings. 330

40 Simon, M., Flushing.—Copper model of lock gates. 330

41 Stang, T., Hague.—Drawings of aqueduct. 330

42 Dutch Railroad Co., Amsterdam.—Model of railroad bridge, and drawings. 332

43 Nierstrasz, N. H., Bois-le-Duc.—Plans and drawings. 332

44 Zimmerman, G. P. H., Gouda.—Chart of Suriname river. 335

Physical, Social, and Moral Condition of Man.

45 Boer, P. N., Rotterdam.—Model of cheap boarding-house. 342

46 Tjeenk Willink, W. E. J., Zwolle.—Drawings and statutes of Workmen's Association. 342

47 Association for Improvement of Workmen's Buildings, Leuwarden.—Drawings and statutes. 342

48 Association for Improvement of Workmen's Buildings, Hague.—Model of lodgings for workmen. 352

50 Help Yourself Association, Leuwarden.—Statutes, plans, etc. 342

51 Beneficial Association.—Models, drawings, writings, and photographs. 346

52 Gori, M. W. C., Amsterdam.—Work on hospitals. 346

The "Red Cross."

63 Dutch Association for Assisting Sick and Wounded Soldiers in War Time.—Publications. 346

Machines and Tools for Working Metal, Wood, and Stone.

54 Haverkamp, Begemann E., Helmond.—Cutter bore machines. 551

Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

55 Rennes, D. W. van, Utrecht.—Sewing machine. 531

Motors, Power Generators, etc.

56 Prakke, J. E. & H., Eibergen.—Leather straps; belting. 553

57 Naeff, G. & M., Lochem.—Leather straps; belting. 553

Hydraulic and Pneumatic Apparatus.

58 Rennes, D. W. van, Utrecht.—Machine for moving liquids by heat. 560

59 Rietschoten, van, & Houwens, Rotterdam.—Model of engine for deepening rivers, etc. 563

60 Bikkers & Son, Rotterdam.—Fire extinguishers. 564

61 Burger, H., Deventer.—Velocipedes. 571

62 Heshuijsen, W. F., Sandpoort.—Railroad switch. 571

63 Bens, A., Deventer.—Coffee and bean mills. 585

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 27-45.

## SWEDEN.

(North of Nave, Columns 6 to 11.)

## Educational Publications and Appliances.

## Educational Systems, Methods, and Libraries.

- 1 Abrahamson, Aug., Nääs, Floda.—Work by pupils of Nääs School of Home Industry for Boys and Girls. 300
- 2 Alard, A. F., Simtuna.—Musical staff table. 300
- 3a Anderson, N. J., Stockholm.—Animals, plants, and minerals. 200
- 3 Bagge, G. B., Paris, France.—Geographical maps. 300
- 4 Berggren, A. N., Stockholm.—Method of penmanship. 300
- 4a Brunell, J. E., Stockholm.—Penholders. 300
- 5 Cervin, C. G., Hesselby, Stockholm.—Model of a school-house. 300
- 6 Glömsta Manufactory, Huddinge.—Universal school form. 300
- 7 Royal Swedish Commission, Stockholm.
- a A primary school house, with accessories of furniture, books, maps, and apparatus for instruction. (*In the Park, Building No. 107.*) 300
- b Newspapers at present published in Sweden. 306
- 8 Erdman, Edward, Stockholm.—Geographical diagrams. 300
- 8a Lewenhaupt, Count C. M., Clacatorp.—Toys, split shavings for mats, etc. 300
- 9 Lindblad, M. A., Stockholm.—Dried plants and cryptogamic types. 300
- 10 Winslow, A. P., Göteborg.—Herbarium for schools. 300
- 11 Nordlund, K., Gefle.—Apparatus for instruction in arithmetic. 300
- 11a Technical Elementary Schools (collective exhibit).—Work of pupils. 300
- 11b Hennings, R. T., Örebro.—Methods and means of instruction. 300
- 11c Svensson, A., Stockholm.—Stuffed mammals, birds, and fishes. 300
- 11d Wiman & Co., Stockholm.—School stoves. 300
- 11e Zanders, H., Nowköping.—Drawings of gymnastical apparatus. 300
- 14 Fries, Th. M., Stockholm.—Spitzbergen herbarium. 301
- 15 Ramsay, Ebba, Mrs., Göteborg.—Drawings of Spitzbergen plants. 301
- 16 Windrufva, Sven, Stockholm.—Scandinavian herbarium. 301
- 16a Vrana National High School, Vrana.—Samples of pupils' work. 301
- 17 Alnarp Agricultural Institute, Alnarp.—Maps and drawings of the farm buildings of the agricultural high school, photographs of its domestic animals, and a collection of plants grown on the farm of the school; works by pupils. 301
- 19 Royal War Department, Stockholm.—Works and drawings by pupils at the military school of Carlberg and military high school of Marieberg. 301
- 26 Staaf, P. O., Stockholm.—Agricultural and sylvicultural text books. 301
- 27 Wulff, H. A., Appderum, Kalmar.—Scheme of the agricultural school, drawings of farm buildings and implements, with specimens of soil and agricultural products. 301
- 28 Borg, O. E., Manila, Stockholm.—Combined apparatus for speaking and hearing, for half deaf and dumb; symbolical vocabulary, used for the instruction of deaf and dumb. 303
- 29 Holm, F. J. W., Stockholm.—Model of the gymnastic hall at the institute for deaf and dumb of Manila, in Stockholm. 304
- 30 Working Home for the Blind, Stockholm.—Basket work by blind pupils. 305
- 31 Public Institute for the Deaf, Dumb, & Blind, Stockholm.—Pupils' works. 305
- 32 Olsson, Magnus (blind, deaf, & dumb), Malung, Lima.—Willow furniture. 305
- 33 Klemmings Antiquarian Stock Co., Stockholm.—Books printed in Sweden in the 16th, 17th, and 18th centuries, with accounts of the earliest Swedish settlements in America. 306
- 33a Brunius, A. W., Stockholm.—Books. 306
- 33b Royal Statistical Central Bureau, Stockholm.—Statistical diagrams. 306
- 33c Sidenbladh, Ellis, Stockholm.—Statistical accounts of Sweden. 306
- 34 Central Printing Stock Co., Stockholm.—Typographical productions. 306
- 35 Gumaelius Arvid, Örebro.—The newspaper "Allehanda för Folket." 306
- 36 Key, Axel, Stockholm.—Anatomical treatise, periodical papers upon medicine and popular science. 306
- 38 Key, A. & Retzius G., Stockholm.—Studies in anatomy; periodical devoted to popular science. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.



Scientific Instruments, Engineering Designs.

Institutions and Organizations.

- 39 Hammer's Museum, Stockholm.—  
Photographs, catalogues, etc. 312
- 40 Royal Economical Society, Lulea.  
—Laplanders' costumes and utensils. 312
- 40a Schlyter, G. R., Stockholm.—  
Roman costumes. 312
- 40b Nordenskiöld, A. E., Stockholm.—  
Meteorite from Greenland. 312

Scientific and Philosophical Instruments and Methods.

- 41 Royal Agricultural Society of the  
Land of Göteborg & Bohus.—Apparatus  
for deep-sea soundings and marine evapo-  
rimeters. 320
- 42 Gundberg, J. W. L., Stockholm.—  
Copper vessels for preserving zoological  
specimens; zoological sieves. 320
- 43 Leja, Joseph, Stockholm.—Ther-  
mometer. 320
- 44 Lindahl, Jos., Lund.—Appara-  
tus for deep-sea soundings and dredgings.  
320
- 45 Ljungström, J. P., Stockholm.—Geo-  
detic and surveying instruments. 320
- 47 Rose, J. L., Upsala.—Magnet and  
needle-compasses for mines. 320
- 48 Theorell, A. G., & Sörensen, P.,  
Stockholm.—Meteorograph. 320
- 49 Wiberg, Martin, Stockholm.  
a "Bull-dog apparatus" for deep-sea sound-  
ings. 320
- b Logarithmetical tables, calculated and  
printed by a counting machine; controll-  
ing apparatus for railway trains. 321
- 50 Brehmer, E. F. A., Stockholm.—  
Railway ticket registering apparatus, pa-  
ging machine, etc. 321
- 54 Pettersson, C. J., Carlshamn.—Cal-  
culating machine. 321
- 55 Linderöth, G. W., Stockholm.—  
Clocks. 323
- 57 Unge, V. T., Stockholm.—Appara-  
tus for measuring distances for military  
purposes. 323

For class of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 58 Otter, Baron C. G. von, Stockholm.  
—Signal lantern. 324
- 59 Kuntze & Co., Stockholm.—Air tele-  
graphs. 326
- 61 Ahlberg & Ohlsson, Stockholm.—  
Wind instrument of metal. 327
- 62 Lundholm, C. A. V., Stockholm.—  
School organs and harmoniums. 327
- 64 Malmström, J. G., Göteborg.—Pla-  
nos. 327

Engineering, Architecture, Maps, etc

- 66 Norrman, C. G. V., Stockholm.—  
Model of a pontoon bridge. 333
- 67 Bagge, G. P., Paris, France.—Geo-  
graphical maps. 335
- 68 Erdmann, Edward, Stockholm.—  
Geological maps and models. 335
- 69 Royal Swedish Staff General, Stock-  
holm.—Topographical maps. 335
- 69a Nordenskiöld, A. E., Stockholm.—  
Maps. 335
- 69b Roth, M., Stockholm.—Geographi-  
cal maps. 335
- 69c Sahlbom, W., Stockholm.—Maps. 335
- 73 Economical Survey of Sweden,  
Stockholm.—Economical and agronomical  
maps. 335
- 74 Geological Survey of Sweden, Stock-  
holm.—Geological maps, collections of  
minerals, rocks, and soils. 335

Physical, Social, and Moral Condition of Man.

- 74a Zander, G., Stockholm.—Apparatus  
for mechanical gymnastics. 340
- 75 Royal Swedish Commission, Stock-  
holm.—Collection of current coins and  
bank notes in Sweden. 344
- 75a Lindhen, H. A. W., Stockholm.—  
Letter box. 345

Other educational exhibits from Sweden  
are installed in the Swedish School House,  
No. 107, and are enumerated on page 302.

## NORWAY.

(North of Nave, Columns 4 to 7.)

## Educational Books and Appliances, Scientific Instruments, Statistics.

## Educational Systems, Methods, and Libraries.

- 1 Bergen Common School Board, Bergen.—Collection of materials for a free school. 300
- 2 Sandberg, Andreas, Christiania.—Models of handwriting. 300
- 3 Boeck, W., & Danielssen, D. C., Christiania and Bergen.—Treatises on skin diseases and elephantiasis. 306
- 4 Bentzen, B. M., Christiania.—Books and other specimens of printing. 306
- 5 Norwegian Association of Tourists, Christiania.—Books, maps, photographs, etc. 306
- 6 Jensen, H. J., Christiania.—“The Illustrated News,” and other illustrated works. 306

## Scientific and Philosophical Instruments and Methods.

- 7 Wedel-Jarlsberg, Ferd., Commodore of the Norwegian Navy, Christiania.
  - a Patent control compasses, log machine. 320
  - b System of night signals. 326
- 8 Petersson, A. J., Christiania.—Calculating machine. 321
- 9 Mostue, Thv., & Co., Christiania.—Scales. 322
- 13 Aarestrup, J., Bergen.—Piano. 327

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 14 Brantseg, P., Christiania.—Pianos. 327

## Engineering, Architecture, Charts, Maps, and Graphic Representations.

- 16 The Director of the Public Roads of Norway, Christiania.—Maps, drawings, books. 330
- 18 Geographical Institute of Norway, Director of, Christiania.—Maps and topographical sections. 335
- 20 Collett, Robert, Assistant of the Zoological Museum, Christiania.—Zoo-geographical map of Norway, containing a complete list of the vertebrate animals of the country. 335
- 21 Schubeler, F. C., Professor of Botany at the University of Christiania.
  - a Botanico-geographical map of Norway. 335
  - b Plants of Norway. 338
- 21a Pettersen, Karl, Tromsø.—Geological map with descriptions. 335

## Physical, Social, and Moral Condition of Man.

- 22 Statistical Bureau, Christiania.—Collection of official statistical publications relating to Norway: collection of cartographical representations. 345
- 23 Hagen, J., Christiania.—Leather and skins. 659

## ITALY.

(North of Nave, Columns 1 to 5.)

## Educational Books and Publications, Scientific Instruments.

## Educational Systems, Methods, and Libraries.

- 1 Angelini, Prof. Rodolfo, Rome.—Specimens of penmanship. 300
- 2 Maineri, Carlo, Milan.—Geographical map in relief. 300
- 3 Ben, Michelangiolo, Verona.—Mathematical maps. 300
- 4 Villa, Cav. Prof. Ignasio, Milan.—Geographical maps. 300
- 5 Palizzolo Gravina, Baron Vincent, Palermo.—Scientific books. 301
- 6 Filopanti, Dr. Prof. Quirico, Bologna.—Book on philosophy. 301
- 7 D'Italo, Enrico F. T., Milan.—Map of the world in the form of a globe, and objects for the study of geography and other sciences. 301
- 8 Giordano, Prof. Scipione, Turin.—Materia medica. 302
- 9 Perelli, Prof. Luigi, Milan.—Album, with specimens of stenography. 302
- 10 Viganò, Francesco, Milan.—Scientific books. 302
- 11 Claus, Cav. Prof. Niccolò, Milan.—Didactic and linguistic treatises. 302
- 12 Volante, Alessandro, Turin.—Pamphlet on mechanics. 302
- 13 Strama, Giannina, widow Lucca, Milan.—Collection of music. 302
- 14 Tite di G., Ricordi, Milan.—Collection of music. 302
- 15 Bratti, Seattilli, & Co., Florence.—Collection of music. 302
- 16 Crotta, Giannina, Milan.—Album of music. 302
- 17 C. Cam. Theophilus, Florence.—School books. 306
- 18 Brigola, Gaetano, Milan.—Scientific and miscellaneous books. 306
- 19 Maino, Antonio, Piacenza.—Books and maps. 306
- 20 Morandi, Feltesta, Milan.—Educational books. 306
- 21 Maltese, Dr. Felice, Vittorio, Sicily.—Book on philosophy. 306
- 22 Guida, Prof. Francesco, Naples.—Book on night signals. 306
- 23 Beccari, Gualberta Alaide, Bologna.—Newspaper, "La Donna." 306
- 24 Barra, Prof. Luigi, Ottajano, Naples.—Didactic book. 306

- 25 Gargiulo, Francesco, Naples.—Descriptive book. 306
- 26 Gravina, Domenico, Palermo.—Illustrated books. 306

## Institutions and Organizations.

- 27 Director of the Anatomical & Pathological Museum of Florence.—Microscopic, normal, and pathological anatomical preparations. 311
- 28 Scaraviglia, Torquato, Gualdo Tadino, Umbria.—Album and pictures. 312

## Scientific and Philosophical Instruments and Methods.

- 29 Sollima, Giacomo, Messina.—Milli scales. 322
- 29a Gasparini, Giacomo, Rome.—Meter for measuring grain. 322
- 30 Villa, Cav. Prof. Ignasio, Milan.—Universal clock. 323
- 32 Gennari, Cav. Dr. Enrico, Milan.—Optical instruments. 324
- 33 Ponti, Carlo, Venice.—Camariale and megalithoscope (optical instruments). 324
- 34 Figatner, Enrico, Milan.—Electric batteries. 325
- 35 Gerosa, Edoardo & Emilio, Milan.—Telegraphic instrument. 326
- 36 De Lorenzi, Cav. O. Batta, Venice.—Violins, Stradivarius style. 327
- 37 Bedini, Giuseppe & Sons, Venice.—Harmonic strings. 327
- 38 Venturini, Luigi, Padua.—Harmonic strings. 327
- 39 Giuliano, Ditta, Naples.—Cylindrical piano. 327

## Engineering, Architecture, Maps, etc.

- 40 Linari, Eng. Antonio, Rome.—Plan for a tunnel. 330

## Physical, Social, and Moral Condition of Man.

- 41 Acquadro, Paolo, Turin.—Postal box. 345
- 42 Aurineta, Cav. Marco Aurelio, Naples.—New system of disinfection. 346

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# BRAZIL.

(North of Nave, Columns 58 to 61.)

## Educational Books and Publications, Scientific Instruments.

### Educational Systems, Methods, and Libraries.

- 1 Municipal School Boards, Rio de Janeiro.—Text books, specimens of writing, drawing, and needle work. 300
- 2 Santa Candida School for Girls, Rio de Janeiro.—Specimens of penmanship. 300
- 3 Faculty of Medicine, Rio de Janeiro.—Text books and theses on medical and surgical subjects. 302
- 4 Naval School, Rio de Janeiro.—Educational books, specimens of drawings, models, etc., made by the cadets; maps, charts, etc. 302
- 5 Commercial Institute, Rio de Janeiro.—Specimens of drawing, writing, and book-keeping. 302
- 6 Academy of Fine Arts, Rio de Janeiro.—Specimens of drawing and pupils' work. 302
- 7 Public Instruction Board, Rio de Janeiro.—Educational books, specimens of writing and needle work. 302
- 8 Arts & Trades Lyceums, Rio de Janeiro.—Drawing and pupils' works. 302
- 9 Artistic Institute, Rio de Janeiro.—Chromo-lithographic engravings, printed books, maps and charts, specimens of book-binding. 302
- 10 Military Archives, Rio de Janeiro.—Maps and charts. 302
- 11 Faculty of Medicine, S. Salvador da Bahia.—Collection of theses on medical subjects. 302
- 12 Institute for Deaf & Dumb, Rio de Janeiro.—Educational books, specimens of drawing and dactylographical painting; shoes made by pupils. 303
- 13 Imperial Institute for Blind Boys & Girls, Rio de Janeiro.—Apparatus used in teaching; books, geometrical figures, musical compositions; specimens of needle work. 303
- 14 Home Department, Rio de Janeiro.—Educational reports, laws, regulations, statistics, and catalogues. 304
- 15 Gaveao, Coronel J. M., & Paes de Barros, San Paulo.—Newspapers. 306
- 15a Laemmert, Edward & Henry, Rio de Janeiro.—Books. 306
- 16 Leuzinger & Sons.—Specimens of printing. 306
- 17 Moreira, Nicolau J., Rio de Janeiro.—"The National Industry Guide Re-  
-," treatise on colonization. 306
- National Printing Office, Rio de Ja-  
    various typographical objects. 306
- 19 Commission-General for the National Exhibitions, Rio de Janeiro.—Collection of Brazilian newspapers. 306
- 20 Silva, Pessanha da, Rio de Janeiro.—Brazilian medical annals. 306
- 22 Villeneuve, J., & Co., Rio de Janeiro.—"Journal of Commerce." 306
- 23 Roxo, Monteiro, & Lemos, Rio de Janeiro.—"Direito Mercantil." 306
- 24 Possolo, E. Germack, Rio de Janeiro.—Books. 306
- 25 Alves, S. José, Rio de Janeiro.—Books. 306
- 26 d'Azevedo, J. G., Rio de Janeiro.—Books. 306

### Institutions and Organizations.

- 27 Leuzinger & Sons, Rio de Janeiro.—Collection of articles for museums. 312
- 28 Brant, J. Ferreira d'A., Minas Geraes.—Collection of insects. 312
- 29 Napoleao, Narciso & Arthur, Rio de Janeiro.—Music printing and engraving. 313
- 30 Santos, Aquilino dos, Rio de Janeiro.—Musical compositions. 313
- 31 Silva, Francisco Manuel da, Rio de Janeiro.—Musical compositions. 313
- 32 d'Araujo, Gomes, Rio de Janeiro.—Musical compositions. 313
- 33 Lago, Emilio do, Rio de Janeiro.—Musical compositions. 313
- 34 Goyano, J. J., Rio de Janeiro.—Musical compositions. 313
- 35 Silva Callado, J. A. da, Rio de Janeiro.—Musical compositions. 313
- 36 Amat, José, Rio de Janeiro.—Musical compositions. 313
- 37 Meneses, Cardoso de, Rio de Janeiro.—Musical compositions. 313
- 38 Campos, A., Rio de Janeiro.—Musical compositions. 313
- 39 Ribas, Edward, Rio de Janeiro.—Musical compositions. 313

### Scientific and Philosophical Instruments and Methods.

- 40 Army Arsenal of Rio Grande do Sul.—Metal meridian. 320
- 41 Saldanha, Luiz de, Brazilian Navy.—Nautical repeating compass. 320
- 41a Pinheiro, A. Pereira, Brazilian Navy.—Stereograph or automatic deep-sea sounding apparatus. 320
- 42 Garrid.—Apothecaries' scale. 322

of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Musical Instruments, Engineering Designs, Coins.

- 43 General Commission from Rio de Janeiro.—Piano; large guitar (viola), and small guitars (machetes). 327
- 44 Lins, Lamenha, Sancta Candida.—Guitars. 327
- 45 Couceiro, J. do Santos, Rio de Janeiro.—Violin and bow. 327
- 46 General Commission for Brazil.—Piano. 327

## Engineering, Architecture, Charts, Maps, and Graphic Representations.

- 47 The Board of Directors of the "Pedro II. Dock Works" Co.—Drawings showing the "Pedro II. Dock Works" at Rio de Janeiro, and samples of the wood employed in the works, submarine constructions, wharves, and warehouses. 330
- 48 Rebouças, André & Castro, Borja, Rio de Janeiro.—Photographs of custom-house dock works, plans containing details of work, etc. 330
- 49 Public Works Office, Rio de Janeiro.—Project to improve the harbors of Brazil, by Sir John Hawkshaw. 330
- 50 Liais, E., Rio de Janeiro.—Surveys and profiles of the rivers Das Velhas and San Francisco, with reports. 330
- 51 Hydrographic Department, Rio de Janeiro.  
 a Surveys of the Amazonas river for 2240 miles. 330  
 b Charts of the coast and harbors of Brazil. 335
- 52 Speir, W., Province of San Paulo.—Drawings of the railroad from Santos to Jundiahy, San Paulo. 332
- 53 Fox, Engineer, Province of San Paulo.—Plans and drawings. 332
- 54 Public Works Office, Rio de Janeiro.  
 a Drawings, showing the bridges of the Pedro II. railway. 332

- b Charts and topographical maps of the various provinces, etc. 335

- 55 Penna, Ferreira, S. Pedro du Sul.—Plans, estimates, and reports on the projected railway from Porto Alegre to Uruguayana. 332
- 56 Loyd, Engineer, Rio de Janeiro.—Project of a railway to the Province of Matto Grasso, with plans, estimates, etc. 332
- 57 Bulhoes, Engineer, Rio de Janeiro.—Railway plans, illustrations, estimates, etc. 332
- 58 Coutinho, Silva, Rio de Janeiro.—Project to lengthen the railway line to the Province of Pernambuco, with plans, etc. 332
- 59 Garceiz, Prof.—Geological map of the province of Minas-Geraes. 335
- 60 Commission-General for the National Exhibitions.—Maps of the Province of San Paulo; elements for the organization of a physical chart of Brazil, by Homen de Mello. 335
- 61 Mendes, C., Rio de Janeiro.—Atlas of the Brazilian empire. 335
- 62 Rohan, General de Beaurepaire, Rio de Janeiro.—General chart of the Brazilian empire. 335

## Physical, Social, and Moral Condition of Man.

- 63 National Mint, Rio de Janeiro.—Collection of medals stamped by the mint; collection of Brazilian coins. 344
- 64 Suplicy, J. F., Province of Paraná.—Collection of medals obtained by galvanoplastic method, galvanoplastic pile. 344

(For Naval Engineering, see Machinery Hall.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

# ARGENTINE REPUBLIC.

(South of Nave, Columns 2 to 5.)

## Books, Maps, Statistics.

### Educational Systems, Methods, and Libraries.

- 1 Gonzalez, Meliton, Province of Entre-Rios.—Map of the province. 300
- 2 Chapeaurouge, C. de, Province of Santa Fé.—Map of the province. 300
- 3 Grousac, Paul, Province of Tucumén.—Map of the province. 300
- 4 Monguillot, E., Province of Buenos Ayres.—Sheet music. 302
- 5 Scapatura, A., Province of Buenos Ayres.—Sheet music. 302
- 6 Yorge, Faustino, Province of Buenos Ayres.—Statistical register of the province. 305
- 7 Rossell, Peter, Province of Buenos Ayres.—Periodical—"Correo Argentino." 306
- 8 Bridma, Martin, Province of Buenos Ayres.—Books of typographical samples. 306

- 9 Costa, Angel F., Province of Buenos Ayres.—Work on finance. 306
- 10 Navarro, Samuel, Province of Buenos Ayres.—Work on immigration. 306
- 11 Navarro, Mardogeco, Province of Buenos Ayres.—Statistics of the epidemic of 1871. 306
- 12 Zuñy, Antonio, Province of Buenos Ayres.—Books. 306
- 13 Espineyro, Mariano T., Province of Buenos Ayres.—"The Judicial Periodical." 306
- 14 Chucco, Manuel C., Province of Buenos Ayres.—Books. 306
- 15 Ledesmo, Justiniano A., Province of Buenos Ayres.—Books. 306
- 16 Minister of the Interior.—"Memoirs of the Governor of Chaco." 306
- 17 Gelderen, A. van, Province of Buenos Ayres.—Encyclopedia. 306
- 18 Argentine Rural Society.—Annals of the Society; official bulletin of the National Exhibition of Córdoba. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## SPAIN.

[The exhibit of Spain in the Department of Education and Science is installed in the Spanish Pavilion, and catalogued in Part III., pages 132 to 141.]

## PORTUGAL.

(South of South Avenue, Columns 13 to 17.)

## Publications, Statistics, Scientific Instruments, Engineering Designs.

## Educational Systems, Methods, and Libraries.

- 1 Brito Aranha, Pedro W. de, Lisbon.—Elementary books. 300
- 2 Perry, Gerardo A., Lisbon.—Atlas with statistics of Portugal and colonies. 305
- 3 Association for the Encouragement of Manufactures, Lisbon.—A frame with diplomas, statutes and elementary books. 306
- 4 Direction of the Public Works of Mondego, Figueira.—“Mémor on the River Mondego;” “Catalogue of Plants in the Forest of Choupal.” 306
- 5 Ferraz, José L. M., Ega.—Work on pharmacy. 306
- 6 Infante Dom Luiz Observatory, Lisbon.—Scientific publications. 306
- 7 Magalhães & Moniz, Oporto.—Text books and other works. 306
- 8 Menço, Francisco da Silva, Oporto.—Books. 306
- 9 Nepomuceno, Manuel, Oporto.—Books. 306
- 10 Silva, Joaquim Possidonio Narciso da, Lisbon.—Memoirs on archaeological and architectural subjects. 306
- 11 National Printing Office, Lisbon.—Printed works. 306
- 12 Portuguese Civil Engineers' Society, Lisbon.—Copies of the “Revista d'Obras Publicas e minas.” 306
- 13 Sarmiento, Anselmo Evaristo de Moraes, Oporto.—Copies of the “Actualidade” journal. 306
- 14 Department of Finance, Lisbon.—Commercial statistics of Portugal. 306
- 14a Queiroz, G. J. de, Lisbon.—Commercial statistics of Portugal, graphically arranged. 306
- 15 Proença, H., Lisbon.—Bound copies of Portuguese newspapers and journals. 306
- 16 Costa, Godolphim, Lisbon.—Literary work. 306
- 17 Chardron, Ernest, Oporto.—Dictionary of the Portuguese language. 306
- 17a Lallement Bros., Lisbon.—Typographical works, printing on satin. 306

## Institutions and Organizations.

- 18 Industrial Institute of Oporto.—History, organization, and course of studies. 310

## Scientific and Philosophical Instruments and Methods.

- 19 Board of Public Forests, Lisbon.—Maps. 320

## 20 Industrial Institute of Lisbon.

- a Levels and planimeter. 320
- b Pantometers. 322
- c Pendulum. 323
- d Topo-photographic camera. 324

## 21 Infante Dom Luiz Observatory, Lisbon.—Meteorological and magnetic registers. 320

## 22 Bastos, Antonio Pinto, Lisbon.—Hydrometer. 320

## 23 Continho, D. Martinho da Franca, Lisbon.—Goniometric, goniographic and telemetric compass, pyramidal compass. 321

## 24 Pereira, Verissimo Alves.—Hydrometer. 321

## 27 Oliveira, Justino Gomes de, Villa Nova de Gaia.—Gold watches. 321

## 28 Motta, José Maria, Lisbon.—Electric bells. 326

## 30 Cabral, Affonso do Valle Coelho, Oporto.—Violin. 327

## 31 Araujo, Joaquim G., Braga.—Stringed instruments, guitars. 327

## 32 Ribeiro, Domingos Candido d'Almeida, Oporto.—Violin. 327

## 33 Pereira, Custodio Cardoso, Oporto.—Musical instruments. 327

## 34 Sanhudo, José Ferreira, Oporto.—Stringed instruments. 327

## Engineering, Architecture, Maps, etc.

## 35 Silva, Silverio Augusto Pereira da, Aveiro.—Bridge model. 330

## 36 Administrative Board of Works for the artificial port of Ponta Delgada.—Plan of artificial port at Ponta Delgada, with description and views of same. 330

## 37 Lecrenier, Nicolas Joseph, Lisbon.—Model of rail. 332

## 38 Bayao, F. A. P., Lisbon.—Plan of a portable railway. 332

## 39 Perry, Gerardo A., Lisbon.—Geographical, physical, and orographical maps of Portugal. 334

## 40 Industrial Institute of Oporto, Oporto.—Topographical charts of the river Douro, and of the wine producing district. 335

## 41 Geodetical Department, Lisbon.—Geographic, geological, trigonometrical, and hydrographic maps and charts, and other graphic representations, books, atlases, matrices, etc. 335

## 42 Infante Dom Luiz Observatory, Lisbon.—Marine charts, etc. 337

## Art, Machinery.

Physical, Social, and Moral Condition  
of Man.

- 42<sup>a</sup> General Direction of the Mint &  
Stamped Paper, Lisbon.—Coins and med-  
als. 344

## Sculpture.

- 43 Rio Junior, J. do, Oporto.—Statu-  
ettes. 400  
44 Campolini, Miguel, Oporto.—Clay  
statuettes representing the costumes worn  
in the vicinity of Oporto. 400  
45 Almeida, José J. d'A., Lisbon.—  
Stone figure. 400  
46 Silva & Santos, Oporto.—Clay statu-  
ettes, representing national costumes. 400  
47 National Printing Office, Lisbon.—  
Medals and plates. 402  
48 Industrial Institute of Oporto, Opor-  
to.—Specimens of Guillocher work in  
wood. 405  
49 Oporto Commercial Association,  
Oporto.—Wood carvings. 405

## Engraving and Lithography.

- 51 National Printing Office, Lisbon.—  
*a* Ornamental engravings, plates, etc. 421  
*b* Lithographs. 423  
52 General Direction of the Mint and  
Stamped Paper, Lisbon.  
*a* Copies from engravings. 421  
*b* Copies from lithographs. 423

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

- 52<sup>a</sup> Oporto Commercial Association,  
Oporto.—Lithography. 423

- 53 Reis & Monteiro, Oporto.—Litho-  
graphs. 423

- 54 Mendes, Malaquias José, Lisbon.—  
Impressions from seals. 423

## Photography.

- 55 Infanta Dom Luis Observatory, Lis-  
bon.—Photographs of the sun. 430  
56 General Direction of the Mint and  
Stamped Paper, Lisbon.—Copies from  
photographs. 430  
57 Department of Mines, Lisbon.—Pho-  
tographs. 430  
58 Superintendency of Live Stock of  
the District of Beja.—Photographs show-  
ing races of live stock. 430

- 58<sup>a</sup> Industrial Institute of Oporto,  
Oporto.—Guillocher turning lathe. 510

- 59 Guerra, Joaquim Baptista da Silva,  
Oporto.—Jacquard weaving machine. 520

- 60 National Printing Office, Lisbon.—  
Type. 542

- 61 Continho, Antonio R. da S., Ponta  
Delgada.—Model of a propeller. 554

- 62 Cruz, Luis F. de S., Oporto.—Hy-  
draulic machine. 560

- 63 Castro, Joao V. az Pacheco, Ponta  
Delgada.—Stone hand mill. 585



# TURKEY.

(South of Nave, Columns 14 to 17.)

## Publications, Scientific Instruments, Art.

### Educational Systems, Methods, and Libraries.

- 1 School of Medicine, Constantinople.—Books, treatises, etc., on medicine and natural sciences. 306
- 2 Herzmainska de Slupno, Madame, Constantinople.—Turkish sheet music, bound and unbound. 306

### Scientific and Philosophical Instruments and Methods.

- 3 Kiamil Effendi, Koniah, Koniah.—Wooden sextant. 320
- 4 Moustapha, Constantinople.—Scales and weights. 322
- 5 Sulleiman, Constantinople.—Steel-yards. 322
- 6 Boch Kirkor, Aleppo.—Flute. 327
- 7 Casmani, David, Damascus.—Musical instrument. 327
- 8 Dimitri, Yanina, Yanina.—Shepherd's flute, etc. 327
- 9 Giorgi, Antaki, Aleppo.—Flute. 327
- 10 Giorgi, Kara-Keni, Aleppo.—Mandoline, drum, and kettle drum. 327
- 11 Giorgi Rizso, Yanina, Yanina.—Guitar. 327
- 12 Moustapha Agha, Constantinople.—Flutes and haut-boys. 327
- 13 Manoli (shepherd), Lachita, Crete.—Bag pipe. 327
- 14 Mehemed Nablus, Damascus.—Kettle drum. 327
- 15 Théophani, Nicoforaki, Canea, Crete.—Violin. 327
- 16 Théophani, Nicoliski, Canea, Crete.—Shepherd's flute. 327

### Physical, Social, and Moral Condition of Man.

- 18 Constantinople, Government of.—Turkish gold, silver, and metal coins, commemorative silver medals. 344

- 19 Tersiballon, Hadji Agop, Constantinople.—Collection of Greek, Roman, Byzantine, and Arabian coins, in gold, silver, copper, lead, and stone. 344

### Paintings.

- 20 Ludovic & Vallauri, Constantinople.—Portrait of the late Sultan of Turkey. 420
- 21 Ottoman Commission.—Oil paintings. 420
  - a Scutari.
  - b The Bosphorus.
  - c Turkish lady.
  - d Landscape.

### Engraving and Lithography.

- 22 Masleum Aghiah, Constantinople.—Design. 420

### Photography.

- 23 Granda, Canea, Crete.—Album containing views. 430
- 24 Mikahilides, Adrianople.—Photographic view of Adrianople, the Imperial palace, mosque of Selim, etc. 430
- 25 Sebah, Constantinople.—Photographic views of Athens and the interior of the mosque of St. Sophia. 430

### Industrial and Architectural Designs.

- 26 Constantinople, Government of.—Ottoman architecture. 442

### Ceramic Decorations, Mosaics, etc.

- 27 Vaisse, Martin, & Co., Constantinople.—Brick and tile. 452
- 28 Ana Sebat, Jerusalem.—Tomb and sepulchre of Christ, in mother-of-pearl. 454
- 29 Riza Effendi, Constantinople.—Imitation fruits in wax, etc. 459

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## RUSSIA.

*(South of Nave, Columns 19 to 23.)*

## Educational Publications and Appliances, Scientific Instruments.

## Educational Systems, Methods, and Libraries.

- 1 Strookoff, St. Petersburg.  
a School furniture and other educational appliances. 300
- b Apparatus for mathematical studies. 301
- 1a Laus, Theodore, Revel.—Practical apparatus for setting arithmetical problems. 300
- 3 Strembitski's Laboratory, St. Petersburg.—Appliances illustrating different branches of natural philosophy for school and scientific museums. 301
- 4 Shinhelm, St. Petersburg.—Ethnographical and zoological models. 301
- 5 Sihfeldknecht, St. Petersburg.—Apparatus for mathematical studies. 301
- 6 St. Petersburg Workshop for Educational Appliances and Games.—Articles adapted for school instruction, gymnastics, and games. 301
- 7 Reinbot, St. Petersburg.—Technical collections for schools. 301
- 8 Pik, Jacob, Warsaw.  
a Working model of Bramah's hydrostatic press; model of a steam engine. 301
- b Mineralogical collection.
- 9 Pedagogic Museum, St. Petersburg.—Collection of educational appliances. 301
- 10 Lapshenko & Michaeloff, St. Petersburg.—Collection of educational appliances and apparatus. 301
- 11 Kragsten, St. Petersburg.—Apparatus for physical experiments. 301
- 13 Kowalski, St. Petersburg.—Appliances for the study of geography. 301
- 14 Kochowski, St. Petersburg.—Appliances illustrating geography. 301
- 15 Givotovski, St. Petersburg.—Apparatus, illustrating botany. 301
- 16 Fenoult & Co., St. Petersburg.—Text books and appliances for the study of different branches of knowledge. 301
- 17 Female Workshop of Educational Appliances, St. Petersburg.—Ethnographical models. 301
- 18 Brucher & Bauler, St. Petersburg.—Apparatus for physical experiments. 301
- 19 Practical Technological Institute, St. Petersburg.—Systematical collection for practical instruction in working metal. 301
- 20 Karlowicz, John, Warsaw.—New method of writing music. 301
- 21 Stroganoff Central School of Technical Drawing, Moscow.—General and ornamental drawings executed by the pupils; text books. 301

- 22 Krasinski, Dr. Hubert Novo, Mir-garod, Government of Kherson.—Microscopic preparations of human tissues in sound and pathological state. 301
- 23 Kotomin, Anthony, St. Petersburg.—Models for teaching comparative anatomy. 301
- 24 Imperial Technical School, Moscow.—Collection of furniture, apparatus, instruments, and models for technical instruction, specimens of pupils' work. 301
- 24a Grigorieff, St. Petersburg.—Apparatus for teaching the blind. 301
- 25 Helsingfors Stenographic Society, Finland.—Treatises and periodicals on stenography. 301
- 26 Krassoski, Alexander, Viatka.—Books. 301
- 27 Khitroff, Jrbit, Government of Perm.—Typographical work. 301
- 28 Wolf, Morice, St. Petersburg.—Text books, illustrated books, and other editions. 301
- 29 Unger, Gracian, Warsaw.—"Tygodnic ilustrowan" (illustrated periodical). 301
- 31 Marks, A. F., St. Petersburg.—"Niewa" (illustrated periodical). 301
- 31a Jurgenson, Peter, Moscow.—Music, exhibitor's edition. 301

## Scientific and Philosophical Instruments and Methods.

- 33 Pik, Jacob, Warsaw.  
a Double-barreled air-pump, Cagniard Lelieur's design with clockwork. 301
- b Pyrometer for measuring the linear expansion of various metals: Wallaston's camera-lucida spectroscope. 301
- 34 Milwahi, Joseph, St. Petersburg.—Telemeter instrument for measuring distances without chains or rods. 301
- 35 Imperial Technical School, Moscow.—Apparatus for drawing parabolic lines, and scale for finding the radius of a given arc. 301
- 36 Jagu, Nicolas, St. Petersburg.—Pulse-pump apparatus adapted for accelerating the filtering process. 301
- 37 Zevecki, C., St. Petersburg.—Self-registering nautical instruments. 301
- 38 Ezeraki, E., St. Petersburg.—Counting apparatus for multiplication and division. 301
- 39 Diakoff, George, St. Petersburg.—Arithmometer, new system. 301
- 40 Alexandroff.—Apparatus for verifying cartridges, exhibitor's system. 301

\*or classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Scientific Instruments, Engineering Designs, Maps.

- 41 Gouthrooski, St. Petersburg.—Mechanical scales for verifying cartridges, exhibitor's system (photographs). 322
- 42 Chief Intendancy of War, St. Petersburg.—Method of testing flour, also apparatus for testing the quality and strength of cloth. 322
- 44 Palenoff, Constantine, Niji Tagil, Government of Perm.—Photometer, specially adapted for thermatics. 324
- 45 Martisheff, Wladimir, St. Petersburg.—Optical indicator. 324
- 46 Workshop of the Direction of the Baltic Lighthouses, Revel.—Lamps for lighthouses. 324
- 47 Workshop for Making and Repairing Nautical Instruments, Yermolin, St. Petersburg.—Fresnel's lamp for lighthouses; slides for the magic lantern. 324
- 48 Tabelevitch, T. R. N., St. Petersburg.—Naval signal light. 324
- 49 Starkoff, Eugene, St. Petersburg.—Albumen paper specially prepared for photography. 324
- 50 Koolikoff, Nicolas, Moscow.—Russian national musical instruments. 327
- Engineering, Architecture, Maps, etc.**
- 51 Municipality of the City of St. Petersburg.—Plans of various town institutions and buildings. 330
- 52 Municipality of the City of Warsaw.—Cast iron plate for street pavement. 330
- 53 Prazepny, Charles, Warsaw.—Album containing plans of breweries and distilleries. 331
- 54 Dinaburg Arsenal.—Sapping instruments, and model of pontoon bridge. 333
- 55 Blech, John, Warsaw.—Statistical essay on the construction, management, and revenue of Russia; railways and graphic chart. 333
- 56 Military Engineering Department, St. Petersburg.—Armor plate, plans, and special editions. 333
- 57 Antonoff, Philip, St. Petersburg.—Plan in relief of Sebastopol during siege. 335
- 58 Hydrographical Bureau, St. Petersburg.—Marine charts and coast maps. 335
- 59 Department of Agricultural & Rural Industry, Statistical Bureau of St. Petersburg.—Statistical maps, showing the soil, climate, produce of crops, and cattle breeding in Russia. 335
- 60 Vassilieff, John, Pskoff.—Maps of Russia. 335
- 61 Topographical Bureau of the General Staff, St. Petersburg.—Maps and charts; photo, helio, lithographic works, and electrolyte plates. 335
- 62 Timiriaseff, Demetrius, St. Petersburg.—Statistical atlas. 335
- 63 Municipality of the City of St. Petersburg.—Orographic plan of St. Petersburg. 335
- 64 Kittarg, Modest, St. Petersburg.—Statistical charts. 335
- 65 Flyin, Alexis, St. Petersburg.—Maps, charts, etc. 335
- Physical, Social, and Moral Condition of Man.**
- 66 Anikeyeff, James, Moscow.—Swimming apparatus. 340
- 67 Kittarg, Modest, Garetsooka, Government and District of Moscow.—Disinfecting fluid and powder for dwellings and stables. 342
- 68 Menard, St. Petersburg.—Appliances for stopping up the chinks of window-frames in cold climates. 342

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

# ANNEX TO MAIN BUILDING.

## No. 106.—ANNEX TO MAIN BUILDING. (CARRIAGE ANNEX.)

Architect, H. J. SCHWARZMANN.

(SIZE, 346 x 231.)

This structure is built of corrugated iron, wood, and glass; a one-story building, with sky-lights, situated on Avenue of the Republic, immediately north of the Main Building, and east of the Department of Public Comfort.

### Chemical Manufactures, Furniture.

#### Chemical Manufactures.

- 1 Rogers, Duck & Lewis, Fort Wayne, Ind.—Miller's elastic surfacing liquid, applied to the bare wood of carriage and car bodies. 202
- 1a Rosenberg, D. & Son, New York, N. Y.—Varnishes. 202

#### Furniture, etc.

- 1b Mason, John L., Camden, N. J. 213
- a Soap cup. 213
- b Fruit jars and nursing bottles. 215
- 2 Stewart, S. N., Philadelphia, Pa. 217
- a Models of relief chair and mattress. 217
- b Movable partition and balcony; stair rail. 227
- 2a Lawrence, Lewis P., Philadelphia, Pa.—Swing and nursery chair. 217
- 3 Pennsylvania Working Home for Blind Men, Philadelphia, Pa.—Mattresses. 217
- 3a Covert, Lewis B., New York, N. Y.—Extension step-ladder. 217
- 4 Wunderlich, John N., Philadelphia, Pa.—Adjustable table. 217
- 4a Wagner Drug Milling Co., Philadelphia, Pa.—Refrigerators. 217
- 4b Williams & Co., Nashua, N. H. 217
- a Soapstone slabs, table tops, and shelves. 217
- b Soapstone stoves, register frames, and foot warmers. 222
- c Soapstone wash trays, sinks, griddles, etc. 224
- 5 Clark, I. D. & Co., Gloversville, N. Y.—Cradle, and baby's walking-table. 221
- 6 Thomas, Roberts, Stevenson, & Co., Philadelphia, Pa.—Coal and wood stoves, hot-air furnaces, cooking ranges. 222
- 6a Simonds' Manufacturing Co., New York, N. Y.—Furnace, ranges, registers, and apparatus for ventilating buildings. 222
- 7 Burnham, Chas., & Co., Philadelphia, Pa. 222
- a Gas cooking and heating stoves. 222
- b Weather strips. 227
- 7a Bissell & Co., Pittsburg, Pa.—Grates, ranges, and car heaters. 222
- 8 Cooley, J. G., Hyde Park, Mass.—Lamp cooking apparatus. 222
- 8a United States Soapstone Furnace Co., Boston, Mass.—Soapstone furnace. 222
- 9 Stuart, D. W., Philadelphia, Pa.—Stove. 222
- 10 Orr, Painter, & Co., Reading, Pa.—Ranges, heaters, stoves. 222
- 10a Westland, C. O., Troy, N. Y.—Parlor stove. 222
- 11 Spear, James, & Co., Philadelphia, Pa.—Stoves, heaters, ranges, low-down grates, etc. 222
- 11a Thatcher Heating Co., New York, N. Y.—Furnaces. 222
- 12 Reid & Cooper, Elmira, N. Y.—Cooking stove. Direct draft six-hole cooking stoves and ranges, constructed by new application of principles; warranted to give satisfaction in every instance. 222
- 12a Sheeler, Buckwalter, & Co., Royer's Ford, Pa. 222
- a Parlor and cooking stoves, ranges, and heaters. 222
- c Cherry seeder. 224
- 13 Swett, Quimby, & Perry, Troy, N. Y.—Parlor stove, cooking and heating ranges. 222
- 13a Richardson, Boynton & Co., New York, N. Y.—Furnaces, ranges, heaters, stoves, etc. 222
- 14 Thomas & Joerns, New York, N. Y.—Base-feeding parlor coal vases, movable base-feeding coal bins. 222
- 14a Rand, A. W., Philadelphia, Pa.—Heater and range. 222

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

## Heaters, Ranges, Household Utensils.

- 15 McDougall, S. T., New York, N. Y.—Gas stoves and cabinets, petroleum stoves, cooking apparatus, oil lamps and fixtures, gas burners. 222
- 15a Open Stove Ventilating Co., New York, N. Y.—Open grate, close stove, and warm air furnace combined. 222
- 16 Monitor Oil Stove Co., Cleveland, O.—Cook stove. 222
- 17 Henis, Chas. F., Philadelphia, Pa.—Adjustable elbow for stovepipes. 222
- 18 Leibbrandt & McDowell Stove Co., Philadelphia, Pa.—Stoves, etc. 222
- 18a Florence Sewing Machine Co., Florence, Mass.—Stoves. 222
- 19 Bentley, Jeffrey O., Philadelphia, Pa.—Hollow metallic steam-radiating base-board for heating rooms. 222
- 19a Langstrath, Thomas, Philadelphia, Pa.—Furnaces. 222
- 20 Drippa, Isaac, Philadelphia, Pa.—Safety ventilating heaters for railroad passenger cars. 222
- 21 Stuart, Peterson & Co., Philadelphia, Pa.—Stoves, hollow ware, and hardware goods. 222
- 22 Perkins & McFarland, Philadelphia, Pa.—Heaters and ranges. 222
- 23 Reynolds, J., & Son, Philadelphia, Pa.—Wood and coal furnaces, cooking range. 222
- 25 Morris & Haines, Philadelphia, Pa.—Heaters and range. 222
- 27 Hayes, Coulter & Co., Philadelphia, Pa.—Hot-air furnace, cooking range. 222
- 28 Grossius, John, Cincinnati, O.—Stove for school-houses, etc. 222
- 29 Barry & Lane, New York, N. Y.—Oven range and cast-iron setting. 222
- 30 Creamer, Wm. G., & Co., New York, N. Y.—Railway car ventilators, lamps, and car trimmings; house registers. 222
- 31 Nixon, George, & Son, Philadelphia, Pa.—Hotel range and boiler. 222
- 32 Bartlett, Job, & Sons, Philadelphia, Pa.—Furnaces, kitcheners, low grates. 222
- 33 Gale, D. A. T., Syracuse, N. Y.—Metallic bed bottom. 222
- 33a Wear Bros. & Co., Cincinnati, O.—Stove. 222
- 34 Barstow Stove Co., Providence, R. I., New York, N. Y., and Boston, Mass.—Stoves, ranges, furnaces, heaters, hollow ware, etc. Awarded Grand Medal of Merit at Vienna Exposition, 1873. 222
- 35 Hopkin, William, jr., Philadelphia, Pa.—Furnace, range, and boilers. 222
- 37 Sheppard, Isaac A., & Co., Philadelphia, Pa.—Stoves, ranges, furnaces, hollow ware. 222
- 39 Tuttle & Bailey Manufacturing Co., New York, N. Y.—Hot-air registers, ventilators, ornamental screens for steam etc. 222
- 40 Teator, Wm., & Co., Cincinnati, O.—Cooking stoves. 222
- 41 Caldwell & Mather, Philadelphia, Pa.—Cooking ranges and heating furnace. 222
- 42 J. L. Mott Iron Works, New York, N. Y.—Ranges, heaters, stoves, and grates. 222
- 43 McCoy & Roberts, Philadelphia, Pa.—Portable hot-air furnaces. 222
- 44 Barker, Geo. R., Philadelphia, Pa.—Combined heating and ventilating flue apparatus and double register. 222
- 45 Gold's Heater Co., 47 Cliff street, New York, N. Y.—Heaters. Constructed on the principle of extensive radiating surfaces, which has the effect of reducing the temperature, so as not to injure the quality of the air warmed. Produces same result as heat made by steam or hot water—a pure and healthful atmosphere. 222
- 46 Williams, Charles, & Co., Philadelphia, Pa.—Heaters, ranges, ventilators. 222
- 47 Rathbone, Sard & Co., Albany, N. Y.—Stoves and ranges for coal or wood. 222
- 48 Abendroth Bros., New York, N. Y.—Stoves, ranges, plumbers' ironware, vases, fountains, hot-house and stable fittings. 222
- 50 Giles, H. G., & Son, Troy, N. Y.—Portable furnace and range, and parlor stoves. 222
- 51 Myers, George, Philadelphia, Pa.—Bath boilers and tanks. 222
- 52 Whitehead, Thomas J., South Paris, Me.—Combined cooking stove and hot-air furnace. 222
- 53 Chatain, Henry, Washington, D. C.—Baking oven. Patent for sale. One in operation at 713 Eleventh street, Washington, D. C. 222
- 54 National Stove Works, New York, N. Y.—Heaters and ranges. 222
- 55 Doyle, William, Albany, N. Y.—Stoves, furnaces, and ranges. 222
- 56 Comstock, Castle, & Co., Quincy, Ill.—Heating stove. 222
- 57 Keystone Hardware Manufacturing Co., Reading, Pa.  
  - a Hot-air registers, and ventilators. 222
  - b Hardware, apple parers, fruit presses. 224
- 58 Detroit Stove Works, Detroit, Mich.—Cooking and coal and wood heating stoves. Manufacturers of the celebrated Crown Jewel Base Burner, Telfit's Wood Cook, and a full assortment of wood and coal cooking and heating stoves. 222
- 59 Johnson, Black, & Co., Erie, Pa.—Stoves, furnaces, and heaters. 222
- 60 Mitchell, Stevenson, & Co., Pittsburg, Pa.—Stoves. 222
- 61 Hessenbruch, Theophilus, Philadelphia, Pa.—Combination damper and ventilator. 222
- 62 Michigan Stove Co., Detroit, Mich.—Stoves, hollow ware, stove furniture, etc. Manufacturers of cooking, parlor, and heating stoves, from a mixture of Lake Superior and other first-class brands of iron. Our motto: "Everything made first-class, and to sell at reasonable prices." 222
- 63 Lesley, Alex. M., New York, N. Y.  
  - a Gothic furnace. 222
  - b Refrigerators and coolers. 224
- 64 March, Brownback & Co., Lime-  
  - rick Station P. O., Pa.—Heaters, ranges, and hollow ware. 222

## Heaters, Ranges, Household Utensils.

- 65 Boyd, David, New York, N. Y.—Flue radiator, flue and diaphragm attachment. 222
- 66 New Haven Steam-Heating Co., New Haven, Conn.—Radiators and screens for low-pressure steam-heating. 222
- 67 Miller, William, Cincinnati, O.—Ranges. 222
- 68 Corey, Jas. H., New York, N. Y.—Culinary boiler and steam and exhaust valve combined. 222
- 69 Duparquet, L. F., & Huot, New York, N. Y.  
a Ranges, broilers. 222  
b Coffee and tea urns, cooking utensils. 224
- 71 Shepherd, Chas. H., Philadelphia, Pa.—Refuse of cork prepared for kindling fires. 222
- 72 Belson, R. W., Philadelphia, Pa.—Warm-air furnace. 222
- 73 Williams & Co., Nashua, N. H.—Stoves, washtrays, sinks, griddles, etc., of Francetown soapstone. 222
- 76 Ferris, Geo. H., New York, N. Y.—Domestic boiler, coffee still. 222
- 77 Gardner, M. W., Green Island, N. Y.—Combination knobs for stoves, ranges, etc. 222
- 78 Birkey, John Q., & Co., Philadelphia, Pa.—Gas heaters. 222
- 80 Masser, H. B., Sunbury, Pa.—Coffee roaster. 222
- 81 Garrison, W. S., Volga City, Iowa.—Tubular heating stove. This stove will warm from five to twenty rooms without extra fuel. Send for engraving and circular to Tubular Stove Co., Clear Lake, Iowa. 222
- 82 Magee Furnace Co., Boston, Mass.—Furnace, ranges, parlor stoves. Magee's Standard Hot-air furnace, cased with a patent non-conducting material. Same furnace for sheet iron casing. Same furnace for setting in masonry. The radiators of these furnaces are manufactured of heavy plate iron, and all warranted gas- and dust-tight. Their durability, economy, and successful operation have been fully demonstrated, and are guaranteed. Three samples of Magee's Standard Portable Ranges. Magee's Standard Brick Range (also exhibited in operation at the New England log cabin). Two samples of Magee's Standard Parlor Stove. Two samples of Magee's Standard Base Burner. Two samples of Standard Portable Low Down Grate. Magee's Standard Hall Stove. Magee's Standard Dining-Room Heater. Magee's Standard Cook Stove. Magee's Advance Cook Stoves. Magee's goods are eminently popular wherever used, and are warranted in every particular by the manufacturers. 222
- 83 Read, Josiah M., Boston, Mass.—Cooking range, stove dampers, lifters, and broilers. 222
- 83a Croll, Benj. P., 839 Arch street, Philadelphia, Pa.—Rhind's Patent Kerosene Safety Lamp. Rhind's Patent Kerosene Safety Lamp has been placed upon the market, and the public is invited to test it. Its qualities are: First, it extinguishes itself when overturned; second, it extinguishes itself when dropped from the hand; it cannot be filled when lighted, and can be carried about at pleasure. It is so constructed that blowing down the chimney or turning down the wick to extinguish the light is unnecessary. The New York board of underwriters have endorsed and recommended its use. Sample price, \$1.25, sent free upon receipt of P. O. order. Merchants supplied at reasonable prices. 222
- 83b Beam, A. F., Philadelphia, Pa.—Oil tanks and cans. 214
- 84 Barrows, Savery & Co., Philadelphia, Pa.—Hollow ware, irons, porcelain refrigerator, etc. 224
- 84a Dunglison, Richard J., Philadelphia, Pa.—Corn grater. 224
- 85 Farson, E. S., & Co., Philadelphia, Pa.—Refrigerators and coolers. 224
- 85a Reidle, E. G., & Co., Philadelphia, Pa.—Seamless tin boxes. 221
- 86 Gravenstine, John, Philadelphia, Pa.—Sideboard, refrigerator, and water-cool combined. 224
- 86a Perkins, Eliab, Sterling, Ill.  
a Refrigerator. 224  
b Shutter. 227
- 87 Soggs, C. W., Carbondale, Pa.  
a Fruit and vegetable parer and slicer. 224  
b Folding adjustable ironing table and skin-board. 225
- 88 Lacy, Walter, Milwaukee, Wis.—Steamless cooking shelf. 224
- 90 Kimball, Wm. S., Philadelphia, Pa.—Refrigerator, filter, and cooler. 224
- 91 Parker, Chas., Meriden, Conn.—Coffee mills. 224
- 92 Berney, Alfred, Boston, Mass.—Teakettle, boiler, and steamer; dry, wet, and weighing measure combined; coffee cans. 224
- 93 Patent Keg Co., Philadelphia, Pa.—Paint and other cans. 224
- 94 Keller Manufacturing Co., Harrisburg, Pa.—Graduated quart measure. 224
- 95 Hess, Abram, Philadelphia, Pa.—Cooking apparatus. 224
- 97 Shepard, Sidney & Co., Buffalo, N. Y.—Japanned and stamped tinware, coal vases, stove boards, ice cream freezers, spice caddies. 224
- 98 Stites & Co., Cincinnati, O.—Iron measures, buckets, and paint pails. 224
- 99 Broch, Isidor, Philadelphia, Pa.—Water filter. 224
- 100 Acquackanonk Manufacturing Co., Passaic, N. J.—House furnishing woodware; step-ladders, hat racks, knifeboards, etc. 224
- 101 Rohrer, Jeremiah, Lancaster, Pa.—Refrigerator and water cooler combined. 224
- 101a Beach, E. R., New York, N. Y.—Match safe base for lamps. 224
- 103 Ford, F. G., Philadelphia, Pa.—Flour and ash pails and sieves combined; toys. 224
- 105 Polhemus, J. H., New York, N. Y.—Refrigerating cupboard, upright and chest refrigerator. 224
- 106 Newark Tea Tray Co., Newark, N. J.—Tea trays, children's trays, stove platforms, dustpans, and brushes. 224
- 107 Dowst, Frank, Manchester, N. H.—Refrigerator. 224

## Household Utensils.

- 108 Allegretti Refrigerator Co., New York, N. Y.—Refrigerators, railroad refrigerator car, undertakers' preserving cabinet. 224
- 110 Olmsted, S., jr., Galesburg, Ill.—Sifter, cullender, and strainer combined. 224
- 111 Silver, W. H., New York, N. Y.—Egg beater, tin churns, and ice cream freezers. 224
- 112 Consolidated Fruit Jar Co., New Brunswick, N. J.—Fruit in Mason's glass jars. Manufacturers of Mason's fruit jars, offers, can screws, and sheet metal wares. 224
- 112a Ketcham, E., & Co., New York, N. Y.—Tin ware, kitchen goods. 224
- 113 Scheider, J., & Co., Portland, Conn.—Stamped and japanned ware; house furnishing goods. 224
- 114 Cull, Henry, Philadelphia, Pa.—Combination sink and dish cupboard and toilet stand; kitchen and dining room furniture. 224
- 115 Missouri Valley Novelty Works, St. Joseph, Mo.—Combination kitchen safe. A money saving, labor saving, household convenience. With this safe a person need not move one step in making bread, cakes, or pastry, for all the necessary machinery and ingredients are centered within reach. 224
- 116 Simes & Tate, Philadelphia, Pa.—Water filter. 224
- 117 Randle, Wm. H., Baltimore, Md.—Water coolers and refrigerators. 224
- 120 Shaw, Charles A., 110 Tremont street, Boston, Mass.—Spice box. 224
- 121 Wilson Manufacturing Co., Philadelphia, Pa.—Clothes dryer, rack, nursery cup. 224
- 122 Rawin, William J., Philadelphia, Pa.—Water coolers, restaurant coolers. 224
- 124 Union Manufacturing Co., Toledo, O.—Washboards, churns, lawn hose carts, kitchen woodenware. 224
- 125 Vignai, Carl, New York, N. Y.—Ice cream refrigerator. 224
- 127 Schaum, John P., Lancaster, Pa.—Copper kettles and copper ware. 224
- 128 St. Louis Stamping Co., St. Louis, Mo.—Granite iron cooking and household utensils. 224
- 130 Bollenbacher, Geo. W., Bloomington, Ind.—Kneading table, with flour and meal chest combined. 224
- 132 Gem Soldering Iron Co., Philadelphia, Pa.  
a Soldering casket. 224  
b Portable shower bath. 226
- 133 McDonald, T. E., New Brunswick, N. J.—Washing machine and wringer. 225
- 134 Moore, Henry, & Son, Philadelphia, Pa.—Washing machine. 225
- 134a Caldwell, M. A., North East, Pa.—Combination brush and rollers for washboard. 225
- 135 Dugdale, Jas. K., White Waters, Ind.—Clothes wringers and washers, garden cultivators. 225
- 135a Gilbert, A. C., Philadelphia, Pa.—Ironing board. 225
- 136 American Machine Co., 430 Walnut street, Philadelphia, Pa.—Crown clothes wringers, frames of galvanized malleable iron, self-adjusting, pressure released from rolls, automatically, when out of use; efficient, practical, and durable. "Crown Fluters and Star Fluters," latest improved construction, celebrated for variety and perfection of work and ease of operation. 225
- 137 Chalfant Manufacturing Co., 507 North street, Philadelphia, Pa.—Proprietor and manufacturers of Mrs. Potts's patent cold-handle sad irons, polishing, laundry, and tailors' irons. 225
- 138 Vant, Armas B., & Cheney, Henry O., Hopkinton, Mass.—Washer and wringer combined. 225
- 139 American Lever Wringer Co., Springfield, O.—Clothes wringer. 225
- 140 Applegate, Robert O., Philadelphia, Pa.—Ironing table. 225
- 141 Duncan, W. A., Syracuse, N. Y.—Washing machine. 225
- 142 Worden, A. E., Smyrna, Del.—Washing machine. 225
- 143 Colby Wringer Co., Waterbury, Vt.—Clothes wringer, little washer. 225
- 144 Bless & Drake, Newark, N. J.—Self-heating smoothing irons, tailors' gese, sad, laundry, and polishing irons. 225
- 146 Calver, Dr. G. W. H., Columbus, N. J.—Household ironing machine, heated by gas or cook stoves. Patent for sale. 225
- 147 Bailey Wringing Machine Co., New York, N. Y.—Clothes wringers. 225
- 149 Jennings, A. W., Bedford, O.—Clothes washers. 225
- 150 Gove, John C., Cleveland, O.—Fruit and provision preserving house, washing machine, adjustable index writer. 225
- 151 Lash, J. S., & Co., Philadelphia, Pa.—Washing machine, bench wringers. 225
- 154 Lamb, Geo. D., New Haven, Conn.—Little washer, iron holder. 225
- 155 Metropolitan Washing Machine Co., New York, N. Y.—Clothes wringers, washing machine, mangle. 225
- 157 Myers, A. G., New York, N. Y.—Water closets and plumbers' material. 226
- 157a Eisenmann, E., New York, N. Y.—Back and head support for the bathtub. 226
- 158 Blessing, C. A., 44 North Fifth street, Philadelphia, Pa., dealer in bath tubs, copper boilers, and plumbers' copper and cabinet ware in general.—Bath tubs, washstand, bidet. 226
- 158a Blakemore & Sherman, Philadelphia, Pa.—Washstand 226
- 159 Carr, Wm. S., & Co., New York, N. Y.—Water closets, brass pumps, cabinet woodwork, and bathroom. 226
- 159a Pease, Charles A., Boston, Mass.—Washstand. 226
- 160 Wakefield Earth Closet Co., New York, N. Y.—Earth closets, combined commode and slop pail. 226
- 161 Carrigan, Peter, Philadelphia, Pa.—Tinned and nickel-plated copper bath-tubs, bidet, footbath, pantry and bar sinks, drainer, and liquor cooler. 226

## Parts of Buildings, Hardware, etc.

- 162 Weaver & Pennoek, Philadelphia, Pa.—Marble lavatory. 226
- 162a Landis, S. M., Philadelphia, Pa.—Turkish bath. 226
- 163 Vinton, C., Hartford, Conn.—Babies' bathtub, sitz bath. 226
- 164 Bacharach, M., New York, N. Y.—Street urinal. 226
- 165 Travis, Jos. L., Philadelphia, Pa.—Water closets, brass and plated work for plumbers and steam fitters. 226
- 166 Steeger, Henry, New York, N. Y.—Copper boilers, bathtubs, etc. 226
- 166a Barth, Gottlieb M., Philadelphia, Pa.—Improvement in window frames. 227
- 166b Ballentine, G. H., Philadelphia, Pa.—Cottage. 227
- 166c Ross, William J., West Boylston, Mass.—House building improvements, etc. 227
- 166d Perry, Jos. R., Wilkesbarre, Pa.—Wooden house. 227
- 166e Patterson, J. E., & Co., Pittston, Pa.—Doors, shutters, newel posts, etc. 227
- 166f Winans, Geo. G., Scranton, Pa.—Wainscoting. 227
- 166g Wilson, Jas. G., New York, N. Y.—Rolling wood shutters and venetian blinds. 227
- 166h Wight, Spencer A., Philadelphia, Pa.—Dust trap for ventilating bulk windows. 227
- 166i Comstock, C. C., Grand Rapids, Mich.—Doors, blinds, mouldings, etc. 227
- 166j Wilt, A., & Son, Philadelphia, Pa.—Sash, blinds, doors, mouldings, etc. 227
- 166k Huginin Manufacturing Co., New York, N. Y.—Automatic window supports. 227
- 166l Bradford, H., Philadelphia, Pa.—Window fastener. This is the only window fastener that locks automatically at any point, by side pressure, without defacing the frame. For sale by H. Bradford, room 26, Merchants' Exchange, corner Third and Walnut streets, Philadelphia. 227
- 166m Champion Fence Co., Kenton, O.—Iron fencing. 227
- 166n Manly, M. M., & Son, Philadelphia, Pa.—Iron railing, wirework, etc. 227
- 166o Clark & Co., New York, N. Y.—Brass and iron store fronts and self-coiling shutters. 227
- 166p Lake Champlain Manufacturing Co., Ticonderoga, N. Y.—Doors, etc. 227
- 166q Ford, W. A., Greensburg, Ill.—Window fastener. 227
- 166r Hayes, Geo. S., New York, N. Y.—Roofing. 227
- 167 Dayton, G. E., New York, N. Y.—Iron gutters, sashes, etc. 227
- 167a Crowell, S., Philadelphia, Pa.—Iron fence. 227
- 167b Hough & Co., Indianapolis, Ind.—Cast iron griffins. 227
- 167c Darby, E., & Son, Philadelphia, Pa.—Wire work. 227
- 167d Lynex, Richard, Philadelphia, Pa.—Wire work. 227
- 167e New York Slate Roofing Co. (limited), New York, N. Y.—Paints and roofing materials. 227
- 167f Garry Iron Roofing Co., Cleveland, O.—Roofing, window shutters, etc. 227
- 167g Augustine & Stuart, Philadelphia, Pa.—Metallic roofing and spouting. 227
- 167h Belts' Roofing Co., Cincinnati, O.—Roofing. 227
- 167i Martin, W. H., & Co., Philadelphia, Pa.—Roofing. 227
- 167j Fairbanks, A. G., Manchester, N. H.—Soapstone roofing. 227
- 167k Kennett, Jas. W., New York, N. Y.—Fireproof appliance for the security of buildings. 227
- 167l Swift, Charles N., New York, N. Y.—Adjustable ventilators. 227
- 167m Bates, J. C., Philadelphia, Pa.—Ventilating apparatus. 227
- 167n Bracher, T. W., New York, N. Y.—Ventilators. 227
- 167o Wallace, S. J., Keokuk, Ia.—Fire-proof floors and roofs. 227
- 167p Penn Roofing Co., Philadelphia, Pa.—Roofing felt, etc. 227
- 167q Humboldt Iron Works, New York, N. Y.—Illuminating tiles. 227
- Clothing, Jewelry, and Ornaments; Traveling Equipments.
- 167r Watts, Ethelber, Philadelphia, Pa.—Portable bath trunk. 227
- Medicine, Surgery, Prothesis.
- 167s Crandall, Chas. J., New York, N. Y.—Crutches. 227
- Hardware, Edge Tools, Cutlery, and Metallic Products.
- 167t Wickersham & Bro., Philadelphia, Pa.—Brass and gold pipe, etc. 227
- 167u Eckel, Herman, Cincinnati, O.—Enameled iron hollow ware. 227
- 167v Musgrove & Son, New York, N. Y.—Fancy articles for tin wedding presents, tin, japanned and copper ware. 227
- 167w Lalance & Grosjean Manufacturing Co., New York, N. Y.—Granite ware, etc. 227
- 168 Rowland, William, & Harvey, Philadelphia, Pa.—Carriage, locomotive, and car springs; tire, sheet, cast, machinery, and blister steel. Re-rolled Norway iron, rolled and slit Norway nail rods. 227
- 168a Mott, J. L., Iron Works, New York, N. Y.—Plumbers' cast iron ware, plain, galvanized, and enameled. 227
- 168b Burwell, William, & Bro., Philadelphia, Pa.—Carriage mountings in silver, oricel, and gold plated. 227
- 168c Anderson, W. W., Philadelphia, Pa.—Models for carriage shackle. 227
- 170 The Philadelphia Axle Co., Philadelphia, Pa.—Iron and steel axles, improved wheels. 227



## Hardware, Parts of Carriages.

- 171 Hoopes, Bro., & Darlington, West Chester, Pa., & at 27 James street, Long-Acre, London, England.—Vehicle wheels of hickory and oak, fine quality and workmanship, thoroughly seasoned. Particular attention given to special styles for builders of private coaches; also Dorman patent wheels with wood hub and iron flanges, spokes secured in hub by wedges, and warranted not to become loose in service. Wheel material and shafts of all kinds to order. 284
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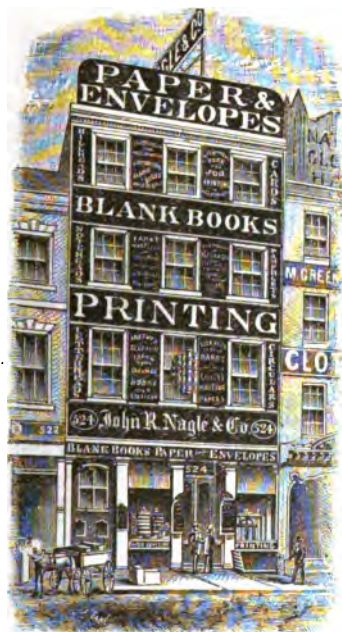
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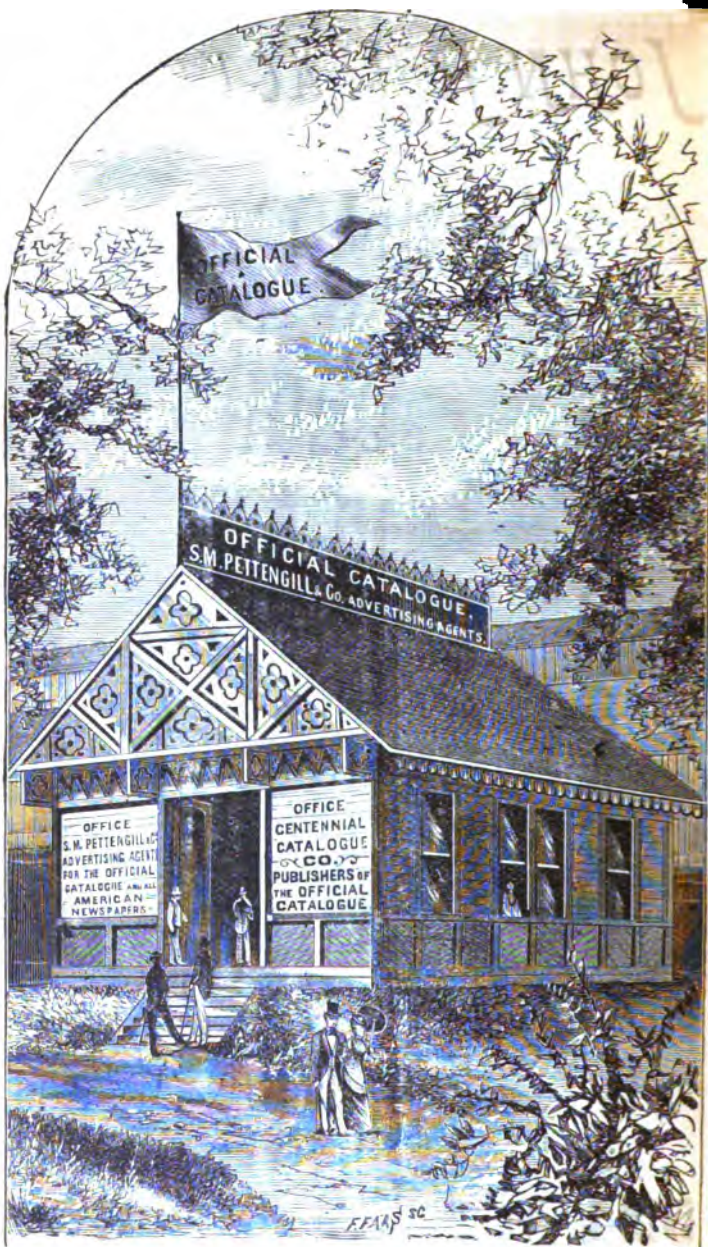
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Spain .....	125, 126	125, 127	.....	.....	.....	.....	130	.....	.....	.....
Russia .....	135	134	136	.....	.....	.....	.....	.....	142	.....

N. B.—The Art exhibit of the following countries is installed, wholly or in part, in the Main Building and catalogued in Part I., viz. :

Great Britain.  
New South Wales.  
Queensland.  
Victoria.  
South Australia.  
New Zealand.  
Cape of Good Hope.  
France.  
Germany.  
Austria.  
Denmark.

Egypt.  
China.  
Italy.  
Japan.  
Hawaii.  
Switzerland.  
Argentine Republic.  
Chili.  
Spain.  
Portugal.  
Russia.

The Spanish Government Building contains additional works of art.

The Women's Pavilion contains works of art from the following countries (Official Catalogue, Part III.), viz. :

United States.  
Great Britain.  
Canada.  
France.

Italy.  
Sweden.  
Norway.

## No. 101. ART GALLERY.

Size 365 by 210 feet.

---

*Architect*, H. J. SCHWARZMAN.

*Contractor*, R. J. DOBBINS.

*Iron work furnished by* EDMOND IRON CO., PENCOD ROLLING MILLS,  
KITTREDGE CORNICE CO.

*Stone work furnished by* SARGENT & CO., WESTHAM GRANITE CO., CONSHO-  
HOCKEN STONE CO., S. F. PRINCE & CO., EXCELSIOR BRICK CO.

*Glass furnished by* BENJAMIN H. SHOEMAKER, WARD & CO., and J. M. ALBERTSON.

---

MEMORIAL HALL, built at a cost of \$1,500,000, by the State of Pennsylvania and City of Philadelphia, is placed at the disposal of the Centennial Commission, to be used during the Exhibition as an Art Gallery, after which it is designed to make it the receptacle of an Industrial Art Museum, similar to the South Kensington Museum, at London. The design is modern renaissance, and the structure is fire-proof. It covers an acre and a half, and is 365 feet long, 210 feet wide, and 59 feet high, over a basement 12 feet high. A dome, rising 150 feet above the ground, surmounts the centre, capped by a colossal ball, from which rises the figure of Columbia. The main front of this building looks southward, displaying a main entrance in the centre consisting of three arched doorways, a pavilion on each end, and two arcades connecting the pavilions with the centre. The entrance is 70 feet wide, to which there is a rise of 13 steps. Each of the doorways is 40 feet high and 15 feet wide, opening into a hall. In each pavilion there is a window 12½ feet by 34 feet, eight in all, which will be used for the display of stained glass, glass paintings, etc. The arcades designed to screen the long walls of the galleries each consist of five groined arches, and form promenades looking outward over the grounds and inward over open gardens extending back to the main wall of the building. These garden-plots are each 90 feet by 36 feet, ornamented in the centre with fountains, and intended to display statuary. The rear or north front of the building is of the same general character as the main front, but, in place of the arcade, has a series of arched windows, twelve in number, with the entrance in the centre. Between the pavilions is the grand balcony, a promenade 275 feet long and 45 feet wide, elevated 40 feet above the ground, and overlooking to the northward the grounds of the Park. On each front of the buildings the entrances open into halls, 82 feet long, 60 feet wide, and 53 feet high. These, in turn, open into the centre hall, 83 feet square, the ceiling rising over it 80 feet in height. From the east and west sides of this central hall extend the galleries, each 98 feet long, 48 feet wide, and 35 feet high. These galleries have temporary divisions for the better display of paintings, and, with the central hall, form a grand hall 287 feet long and 83 feet wide, capable of comfortably accommodating 8000 persons. From the galleries

doorways open into two smaller galleries, 89 feet long and 28 feet wide. These open north and south into apartments connecting with the pavilion rooms, and forming two side-galleries 210 feet long. Along the whole length of the north side of the main galleries and central hall extends a corridor 14 feet wide, opening on its north line into a series of rooms, twenty-three in number, designed for studios and smaller exhibition rooms. All the galleries and the central hall are lighted from above; the pavilions and studios from the sides. The pavilions and central hall are designed especially for the exhibition of sculpture. This building gives 75,000 square feet of wall space for painting, and 20,000 square feet of floor space for statues, etc. The skylights throughout are double, the upper being of clear glass and the under of ground-glass.

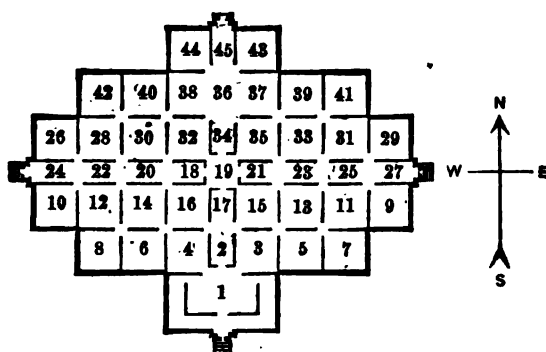
The erection of the building was begun July 4, 1874, and finished March 1, 1876.

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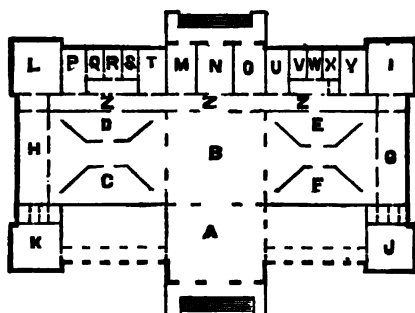
## **No. 102. ANNEX TO ART GALLERY.**

Great as is the space afforded in the Memorial Hall, the applications from American and foreign artists proved so greatly in excess of its capacity as to require the erection of a much more spacious building. This, though only of brick, harmonizes architecturally with the Memorial Hall, and is to be permanent. It stands just in the rear of the original Art Gallery. It affords 60,000 square feet of wall space available for paintings, and contains 30 galleries, each 40 feet square, besides 4 galleries, each 100 feet long by 54 feet wide, and two transverse central corridors, 20 feet wide.





ART GALLERY ANNEX.



AVENUE OF THE REPUBLIC.

### MEMORIAL HALL.—Ground Plan.

- |   |                           |                       |
|---|---------------------------|-----------------------|
| A. Italy.   | J. Germany.               | T. Great Britain.     |
| B. United States, Gt. Britain,<br>Germany, France, Italy. | K. United States, Norway. | U. Italy.             |
| C. United States.   | L. Great Britain.         | V. Italy.             |
| D. Great Britain.   | M. Russia.                | W. Italy.             |
| E. France.  | N. Italy.                 | X. United States.     |
| F. Germany.   | O. Belgium.               | Y. United States.     |
| G. Austria.   | P. Great Britain.         | Z. { Great Britain.   |
| H. Spain and Sweden.                                      | Q. Great Britain.         | { United States.      |
| I. France.  | R. Great Britain.         | { Germany and France. |
|   | S. Great Britain.         |                       |

### ART GALLERY ANNEX.—Ground Plan.

- |                     |                          |                    |
|---------------------|--------------------------|--------------------|
| 1. Italy.           | 16. United States.       | 29. Portugal.      |
| 2. Italy.           | Superintendent's Office. | Brazil.            |
| 3. Italy.           | 17. Italy.               | 30. United States. |
| 4. Italy.           | 18. United States.       | 31. Spain.         |
| 5. Netherlands.     | 19. Italy.               | 32. France.        |
| 6. United States.   | 20. United States.       | 33. Belgium.       |
| 7. Norway.          | 21. France.              | 34. France.        |
| 8. Denmark.         | Netherlands.             | 35. France.        |
| 9. United States.   | 22. United States.       | 36. France.        |
| Argentine Republic. | 23. Belgium.             | 37. France.        |
| Chili.              | Netherlands.             | 38. France.        |
| Mexico.             | 24. United States.       | 39. Belgium.       |
| 10. United States.  | 25. Spain.               | 40. United States. |
| 11. Sweden.         | Sweden.                  | 41. Belgium.       |
| 12. United States.  | 26. Canada.              | 42. United States. |
| 13. Netherlands.    | 27. Portugal.            | 43. France.        |
| 14. United States.  | Argentine Republic.      | 44. United States. |
| 15. Netherlands.    | Brazil.                  | 45. France.        |
|                     | 28. United States.       |                    |

# SYNOPSIS OF THE CLASSIFICATION.

LOCATION.	DEPARTMENTS.	CLASSES.	GROUPS.
MAIN BUILDING.	I. MINING AND METALLURGY.	100—109	Minerals, Ores, Stone, Mining Products.
		110—119	Metallurgical Products.
		120—129	Mining Engineering.
	II. MANUFACTURES.	200—205	Chemical Manufactures.
		206—216	Ceramics, Pottery, Porcelain, Glass, etc.
		217—227	Furniture, etc.
		228—234	Yarns and Woven Goods of Vegetable or Mineral Materials.
		235—241	Woven and Felted Goods of Wool, etc.
		242—249	Silk and Silk Fabrics.
		250—257	Clothing, Jewelry, etc.
		258—264	Paper, Blank Books, Stationery.
		265—271	Weapons, etc.
		272—279	Medicine, Surgery, Prothesis.
		280—284	Hardware, Edge Tools, Cutlery, and Metallic Products.
285—291	Fabrics of Vegetable, Animal, or Mineral Materials.		
292—296	Carriages, Vehicles, and Accessories.		
III. EDUCATION AND SCIENCE	300—309	Educational Systems, Methods, and Libraries.	
	310—319	Institutions and Organizations.	
	320—329	Scientific and Philosophical Instruments and Methods.	
	330—339	Engineering, Architecture, Maps, etc.	
	340—349	Physical, Social, and Moral Condition of Man.	
ART GALLERY.	IV. ART.	400—409	Sculpture.
		410—419	Painting.
		420—429	Engraving and Lithography.
		430—439	Photography.
		440—449	Industrial and Architectural Designs, etc.
		450—459	Ceramic Decorations, Mosaics, etc.
MACHINERY BUILDING.	V. MACHINERY.	500—509	Machines, Tools, etc., of Mining, Chemistry, etc.
		510—519	Machines and Tools for working Metal, Wood, and Stone.
		520—529	Machines and Implements of Spinning, Weaving, etc.
		530—539	Machines, etc., used in Sewing, Making Clothing, etc.
		540—549	Machines for Printing, Making Books, Paper Working, etc.
		550—559	Motors, Power Generators, etc.
		560—569	Hydraulic and Pneumatic Apparatus.
		570—579	Railway Plant, Rolling Stock, etc.
		580—589	Machinery used in Preparing Agricultural Products.
		590—599	Aerial, Pneumatic, and Water Transportation.
			Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.
AGRICULTURAL BUILDING.	VI. AGRICULTURE.	600—609	Arboriculture and Forest Products.
		610—619	Pomology.
		620—629	Agricultural Products.
		630—639	Land Animals.
		640—649	Marine Animals, Fish Culture, and Apparatus.
		650—664	Animal and Vegetable Products.
		665—669	Textile Substances of Vegetable or Animal origin.
		670—679	Machines, Implements, and Processes of Manufacture.
		680—689	Agricultural Engineering and Administration.
		690—699	Tillage and General Management.
HORTICULTURAL BUILDING.	VII. HORTICULTURE.	700—709	Ornamental Trees, Shrubs, and Flowers.
		710—719	Hot Houses, Conservatories, Graperies.
		720—729	Garden Tools, Accessories of Gardening.
		730—739	Garden Designing, Construction, and Management.

# CLASSIFICATION.

## DEPARTMENT IV.—ART.

### SCULPTURE.

- CLASS 400.—Figures and groups in stone, metal, clay, or plaster.  
CLASS 401.—Bas-reliefs, in stone or metal; electrotype copies.  
CLASS 402.—Medals, pressed and engraved; electrotypes of medals.  
CLASS 403.—Hammered and wrought work—*repoussé* and *rehaussé* work, embossed and engraved relief work.  
CLASS 404.—Cameos, intaglios, engraved stones, dies, seals, etc.  
CLASS 405.—Carvings in wood, ivory, and metal.

### PAINTING.

- CLASS 410.—Paintings in oil on canvas, panels, etc.  
CLASS 411.—Water color pictures; aquarelles, miniatures, etc.  
CLASS 412.—Frescoes, cartoons for frescoes, etc.  
CLASS 413.—Painting with vitrifiable colors. Pictures on porcelain, enamel, and metal.

### ENGRAVING AND LITHOGRAPHY.

- CLASS 420.—Drawings with pen, pencil, or crayons.  
CLASS 421.—Line engravings from steel, copper, or stone.  
CLASS 422.—Wood engravings.  
CLASS 423.—Lithographs, zincographs, etc.  
CLASS 424.—Chromo-lithographs.

### PHOTOGRAPHY.

- CLASS 430.—Photographs on paper, metal, glass, wood, fabrics, or enamel surfaces.  
CLASS 431.—Prints from photo-relief plates, carbon prints, etc.  
CLASS 432.—Photo-lithographs, etc.  
CLASS 433.—Photographic apparatus and supplies.

### INDUSTRIAL AND ARCHITECTURAL DESIGNS, MODELS, AND DECORATIONS.

- CLASS 440.—Industrial designs.  
CLASS 441.—Architectural designs; studies and fragments, representations and projects of edifices; restorations from ruins and from documents.  
CLASS 442.—Decoration of interiors of buildings.  
CLASS 443.—Artistic hardware and trimmings, artistic castings, forged metal work for decoration, etc.

### DECORATION WITH CERAMIC AND VITREOUS MATERIALS, MOSAIC AND INLAID WORK.

- CLASS 450.—Mosaic and inlaid work in stone.  
CLASS 451.—Mosaic and inlaid work in tiles, tesserae, glass, etc.  
CLASS 452.—Inlaid work in wood and metal, parquetry, tables, etc.  
CLASS 453.—Stained glass.  
CLASS 454.—Miscellaneous objects of art.



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21 SOUTH SEVENTH STREET.

## UNITED STATES.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the Art Bureau, Memorial Hall.]

(Memorial Hall, Central Gallery, West.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1	Story, G. H., New York,	The Young Student.	David Groesbeck.
1a	Healy, G. P. A., Chicago,	Portrait.	
2	Dolph, J. H., New York,	The Antiquarian.	Artist.
3	Pohle, H., New York,	*The Burning Castle.	E. Franke.
4	Whittredge, W., New York,	The Window.	R. L. Stuart.
5	La Farge, John, New York,	Bishop Berkeley's Rock, Newport.	Artist.
6	Townsend, Chas. E., New York,	*Lion and Lioness.	Artist.
7	Perdicaris, Ion, Trenton, N. J.,	Moorish Interior.	Artist.
8	Hicks, Thomas, New York,	Portrait—Mrs. MacDaniel.	
9	Hubbard, R. W., New York,	*Coming Storm.	Artist.
10	Matthews, W. T., New York,	Globe of Fish.	Artist.
11	Bunner, A. F., Munich,	*Bavarian Landscape.	Artist.
12	Van Elten, K., New York,	Clearing Off—Adirondacks.	G. Chesterman.
13	Du Bois, C. E., New York,	*Willows at East Hampton, L. I.	Artist.
14	Colman, S., New York,	*The Merchants of Laghouat en route between Tell and the Desert, Algeria.	Artist.
15	Pine, Theodore, Chicago,	Portrait of Mrs. Doane.	
16	Miller, Charles H., New York,	Sunset at Queen's, N. Y.	Robert Gordon.
17	Kensett, J. F. (deceased),	Narragansett Coast	R. M. Olyphant.
18	Hamilton, J., Philadelphia,	*"Break, break, break, On thy cold gray stones, O sea!"	Earle & Sons.
19	Durand, A. B., New York,	Studies from nature.	Artist.
20	Boughton, G. H., New York,	The Pilgrims' Sunday Morning.	R. L. Stuart.
21	Baker, G. A., New York,	Portrait—C. L. Elliott.	New York Academy of Design.
22	Benson, Eugene, New York,	Sirocco, Venice.	Artist.
23	Gifford, S. R., New York,	Bronx River.	H. C. Fahnestock.
24	Gifford, S. R., New York,	On the Nile.	J. J. Nesmith.
25	De Haas, M. F. H., New York,	Moonrise and Sunset.	E. D. Morgan.
26	Bellows, A. F., New York,	*Sunday in Devonshire	Artist.

NO.	ARTIST.	TITLE.	OWNER.
27	Gifford, S. R., New York,	Pallanza, Lago Maggiore.	M. Southwick.
28	Mayer, Constant, New York,	*Love's Melancholy.	S. M. Schafer.
29	Cenarroe, G. W., Philadelphia,	Ethel.	Artist.
30	Audubon, J. J. (deceased),	Canada Otter.	Edward Harris.
31	Beeson, Miss E. L., Pittsburg,	*Ophelia.	Artist.
32	White, Edwin, New York,	*The Bargello, Florence.	Artist.
33	Cole, Thomas (deceased),	The Mountain Ford.	J. Taylor Johnston.
34	Huntington, D., New York,	Portrait.	Artist.
35	Van Elten, K., New York,	The Grove in the Heath.	G. Chesterman.
36	Holbrook, H. J., New York,	Portrait.	Artist.
37	MacKnight, Mrs. S. R., New York,	Winter.	Artist.
38	Hubbard, R. W., New York,	Early Autumn.	Judge Benedict.
39	Cropsey, J. F., New York,	Old Bonchurch, Isle of Wight.	Artist.
40	Johnson, David, New York,	Scenery on the Housatonic.	Mrs. J. Bullard.
41	Lambdin, G. C., Philadelphia,	Roses.	Artist.
42	Furness, W. H., Jr. (deceased),	Portrait.	H. H. Furness.
43	Wood, T. W., New York,	The Veteran.	C. S. Smith.
44	Wood, T. W., New York,	The Recruit.	C. S. Smith.
45	Huntington, D., New York,	Portrait—G. T. Trimble.	New York Hospital.
46	Perry, E. Wood, New York,	Young Franklin.	Artist.
47	Kensett, J. F. (deceased),	View near Northampton.	R. L. Stuart.
48	Johnson, Eastman, New York,	Heel-Taps.	
49	Eakins, Thos., Philadelphia,	Chess-Players.	Artist.
50	Waugh, S. B., Philadelphia,	The Cabinet.	Artist.
51	Wood, T. W., New York,	The Contraband.	C. S. Smith.
52	Stuart, Gilbert (deceased),	Portrait—Mrs. S. Eliot.	C. W. Eliot.
53	Loop, H. A., New York,	*Aphrodite.	Artist.
54	Thompson, A., Boston,	*View near Honfleur, Normandy.	Artist.
55	Whittredge, W., New York,	A Hundred Years Ago.	R. M. Olyphant.
56	Birch, Thomas (deceased),	Marine.	Thos. Birch.
57	White, Edwin, New York,	*The Antiquary.	Artist.
58	Miller, C. H., New York,	Returning to the Fold.	Mrs. J. M. Miller.
59	Durand, A. B., New York,	Portrait—Gouverneur Kemble.	Gouverneur Kemble.
60	Allaton, Washington (deceased),	Landscape.	Family of Mrs. S. A. Eliot.
61	Weisman, W. H., Philadelphia,	Cape Ann Rocks.	F. Gutekunst.



NO.	ARTIST.	TITLE.	OWNER.
62	Miller, C. H., New York,	Old Mill at Springfield, L. I.	Mrs. J. M. Miller.
63	Guy, S. J., New York,	Evening.	J. M. Falconer.
64	Thom, J. C., New York,	Day (panel).	James M. Burt.
65	Thom, J. C., New York,	Night (panel).	James M. Burt.
66	Perry, E. Wood, New York,	Kept In.	Artist.
67	Thompson, A. Wordsworth, New York,	On the Sands, East Hampton, L. I.	Artist.
68	Maynard, G. W., New York,	*Vespers in Antwerp.	Artist.
69	Anderson, A. A., New York,	Scene in Cairo.	J. J. Milbank.
70	Anderson, A. A., New York,	Roumanian Peasant Girl.	J. J. Milbank.
71	Benson, Eugene, Rome,	The Strayed Masquers.	C. H. Snoff.
72	Johnson, Eastman, New York,	What the Sea Says.	B. Field.
73	Gifford, S. R., New York,	Lake Geneva.	Wm. Goddard.
74	Twibill, G. W. (deceased),	Portrait—Colonel Trumbull.	New York Academy of Design.
75	Stuart, Gilbert (deceased),	Portrait—Mrs. N. Coffin.	Nath. Appleton.
76	Stone, W. O. (deceased),	Portrait—Charles King.	Union Club, New York.
77	Allston, Washington (deceased),	Portrait of himself when young.	
78	Mount, W. S. (deceased),	Husking Corn.	Mr. Kemble.
79	Gray, H. Peters, New York,	The Model from Cadore.	E. Mitchell.
80	Morse, S. F. B. (deceased),	Portrait.	Dr. D. Olyphant.
81	Woodville, R. C. (deceased),	Card-Players.	W. J. Hoppin.
82	Greene, E. D. E., New York,	Ideal head.	National Academy of Design, New York.
83	Copley, J. S. (deceased),	Portrait—Mrs. T. Boylston.*	Harvard University.
84	Morse, S. F. B. (deceased),	Portrait.	Dr. D. Olyphant.
85	Copley, J. S. (deceased),	Portrait—John Adams.	Harvard University.
86	Allston, Washington (deceased),	Spalatro's Vision of the Bloody Hand.	J. T. Johnston.
87	Stuart, Gilbert (deceased),	Portrait—James Rivington.	W. H. Appleton.
88	Allston, Washington (deceased),	Rosalie.	N. Appleton.
89	Newton, Stuart (deceased),	The Importunate Author.	E. N. Perkins.
90	Newton, Stuart (deceased),	Portrait—Washington Irving.	Mr. T. W. Storrows.
91	Copley, J. S. (deceased),	Portrait—T. Boylston.	Harvard University.
92	Smibert, J. S. (deceased),	Portrait—Bishop G. Berkeley.	Massachusetts Historical Society.
93	Stuart, Gilbert (deceased),	Portrait—Chief-Justice John Jay.	J. C. Jay.
94	Blashfield, E. H., Brooklyn,	*Treasure-Trove.	Artist.
95	Brown, J. G., New York,	Curling Match.	Robert Gordon.
96	Johnson, Eastman, New York,	*Prisoner of State.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
97	Hubbard, R. W., New York,	Glimpse of the Adirondacks.	R. M. Olyphant.
98	Maynard, G. W., New York,	*"1776."	Artist.
99	Lawrie, Alex., New York,	Autumn in the Hudson Highlands.	Henry Marks.
100	Johnson, David, New York,	Scenery on the Housatonic.	L. A. Lanthier.
101	Irving, J. B., New York,	The Bookworm.	A. McL. Agnew.
102	Parton, A., New York,	Solitude.	Wm. D. Judson.
103	Bridgeman, F. A., New York,	Kybelian Woman.	Hon. Alex. McCoo.
104	Brown, G. L., Bos- ton,	*Venice.	Artist.
105	White, Edwin, New York,	*Sabbath of the Emigrant.	Artist.
106	Machen, W. H., Toledo,	Still Life—game.	Artist.
107	Granbery, Miss V., New York,	*Spring Flowers.	Artist.
108	Johnson, Frost, New York,	A Thirsty Party.	Artist.
109	Whittredge, W., New York,	A Home by the Sea.	S. J. Harriott.
110	Gifford, R. Swain, New York,	Boats at Boulah, on the Nile.	L. Tiffany.
111	Brenner, C. C., Lou- isville,	Landscape.	Artist.
112	Durand, A. B., New York,	Il Pappagallo.	Artist.
113	Perry, E. Wood, New York,	The Weaver.	Artist.
114	Niemeyer, J. H., New Haven,	*Gutenberg Inventing Movable Types.	Artist.
115	Moran, Edward, New York,	The Hawk's Nest.	Mrs. H. E. Lawrence.
116	Stewart, J. L., Philadelphia,	Miguel.	W. S. Stewart.
117	Fitch, J. L., New York,	In the Woods.	Artist.
118	Johnson, Eastman, New York,	The Old Kentucky Home.	R. L. Stuart.
119	Whittredge, W., New York,	The Old Hunting-Grounds.	J. W. Pinchot.
120	De Crano, F. F., Philadelphia,	The Celestial Model.	Artist.
121	Cameron, Miss K., Paris,	*Happy as a Queen.	Artist.
122	Wright, Geo., Phil- adelphia,	*One too Many.	Artist.
123	Shade, W. A., New York,	Tantalizing.	Artist.
124	Gifford, R. Swain, New York,	*Egyptian Fountain.	Artist.
125	Moran, Edward, New York,	Minot Ledge Light.	Mrs. H. E. Lawrence.
126	Minor, R. C., New York,	Daybreak.	Artist.
127	Miller, C. H., New York,	The Road to the Mill.	J. L. Melcher.
128	McEntee, J., New York,	October Afternoon.	H. G. De Forest.
129	Guy, S. J., New York,	Solitaire.	J. M. Falconer.
130	Henry, E. L., New York,	Morning Call in 1800.	C. S. Smith.
131	Gignaux, R., New York,	Spring.	T. Messenger.
132	Champney, J. W., Boston,	"Your Good Health."	T. Wigglesworth.

NO.	ARTIST.	TITLE.	OWNER.
138	Brown, J. H., Philadelphia,	Case of miniatures on ivory.	Artist.
139	Cooper, P. F., Philadelphia,	*Madonna—on ivory.	Artist.
139½	Munger, Geo.,	Nathaniel Jocelyn—miniature on ivory.	N. Jocelyn.
134	Carras, H. T., Philadelphia,	Blind-Man's-Buff.	Artist.
135	Benson, Eugene, Rome,	San Giorgio, Venice.	Artist.
136	Benson, Eugene, Rome,	Afternoon on the Lagoon.	Artist.
137	Morse, S. F. B. (deceased),	Portrait—Major Paulding.	New York City Hall.
138	Woodville, R. C. (deceased),	Fancy head.	J. T. Johnston.

(Memorial Hall, Gallery C.)

### SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
139	Roberts, Howard, Philadelphia,	The First Pose.	Artist.
140	Bailly, J. W., Philadelphia,	*Spring.	Artist.
141	Connolly, P. F., Florence,	*Honor arresting the Triumph of Death.	Artist.
142	Connolly, P. F., Florence,	*Ophelia.	Artist.

### OIL PAINTINGS

NO.	ARTIST.	TITLE.	OWNER.
143	Johnson, Eastman, New York,	Catching the Bee.	Miss Jones.
144	Benson, Eugene, Rome,	Interior of St. Mark's, Venice.	Mrs. M. L. Dickinson.
145	Hart, Wm., New York,	Keene Valley, Adirondacks.	Rev. F. L. Robbins.
146	Baker, George A., New York,	Portrait of a child.	Mrs. D. C. Sturgis.
147	Sully, Thomas (deceased),	Portrait—Miss Rosalie Sully.	Mrs. Darley.
148	Bristol, J. B., New York,	*Lake Memphremagog.	Artist.
149	Gay, W. Allen, Boston,	*Windmills of Delfshaven, Holland.	Artist.
150	Vanderlyn, J. (deceased),	Ariadne.	W. H. Eisenbrey.
151	Thompson, Harry I., New Haven,	Portrait.	Artist.
152	Waugh, S. B., Philadelphia,	General Grant.	
153	Elliott, C. L., New York,	Portrait.	E. D. Morgan.
154	Page, Wm., New York,	Shakspeare, after the Death-Mask.	Artist.
155	McEntee, J., New York,	November.	
156	Waterman, M., Boston,	*Gulliver in Liliput.	Artist.
157	Morrell, Mrs. I. Robinson, Paris,	*First Battle of the Puritans, won by Miles Standish.	Artist.
158	Briscoe, F. D., Philadelphia,	Breezy Day off Dieppe.	
159	Jones, H. Bolton, Baltimore,	*The Ferry Inn.	Artist.
160	Moore, H. H., New York,	The Moorish Merchant.	Artist.
161	Nilson, H. M., Paris,	Portrait.	

NO.	ARTIST.	TITLE.	OWNER.
162	Thompson, H. I., New Haven,	Portrait.	Col. Juan Lewis.
163	Neagle, John (de- ceased),	Portrait—Gilbert Stuart.	Boston Athenaeum.
164	Lewis, E. D., Philadelphia,	East Park, Philadelphia.	Artist.
165	Moran, Edward, New York,	The Winning Yacht.	W. A. Cauldwell.
166	Beard, J. H., New York,	The Attorney and his Clients.	G. F. Gilman.
167	La Farge, J., New York,	*Hollyhocks.	Artist.
168	Rothermel, P. F., Philadelphia,	Battle of Gettysburg.	Commonwealth of Penn- sylvania.
169	Champney, J. W., Boston,	"Don't touch!"	Mr. Cheney.
170	Bridgeman, F. A., New York,	Flower of the Harem.	H. E. Nesmith.
171	Winner, W. E., Philadelphia,	Portrait.	Artist.
172	Alexander, F., Bos- ton,	Portrait.	W. Willard.
173	Healy, G. P. A., Chicago,	Portrait.	
174	Miffin, Lloyd, Co- lumbia, Pa.,	Rome, from Marino.	Artist.
175	Rosenthal, T. E., Munich,	Elaine.	Mrs. R. E. Johnson.
176	Williams, I. L., Philadelphia,	*View near Meriden, Connecticut.	Artist.
177	Homer, Winslow, New York,	Snap the Whip.	J. H. Sherwood.
178	Gifford, S. R., New York,	The Golden Horn.	W. J. Peake.
179	Hetzl, Geo., Pitts- burg,	*Forest Scene in Pennsylvania.	Artist.
180	Tait, A. F., Long Lake, N. Y., and Hart, J. M., New York,	The Portage—Waiting for the Boats.	J. B. Blossom.
181	Armstrong, D. M., New York,	*Twilight on the Tiber.	Artist.
182	McEntee, J., New York,	Saturday Afternoon.	M. C. D. Borden.
183	Suydam, J. A. (de- ceased),	Hudson River.	Smith Clift.
184	Hill, Thomas, San Francisco,	Donner Lake.	Hon. L. Stanford.
185	Johnson, Eastman, New York,	The Wandering Fiddler.	J. T. Johnston.
186	Gifford, S. R., New York,	Fishing Boats of the Adriatic.	C. S. Smith.
187	Irving, J. B., New York,	The End of the Game.	J. H. Sherwood.
188	Richards, W. T., Philadelphia,	The Wissahickon.	George Whitney.
189	Pearce, Charles S., Boston,	*L'Italienne.	Artist.
190	Kollock, Miss M., New York,	*Midsummer in the Mountains.	Artist.
191	Clowes, Miss C. M., Poughkeepsie,	*Cattle at the Brook.	Artist.
192	Kollock, Miss M., New York,	Early Morning in the Mountains.	Artist.
193	Guy, S. J., New York,	Supplication.	J. H. Sherwood
194	Huntington, D., New York,	Sowing the Word.	Anson P. Stokes.
195	Johnson, Eastman, New York,	The Old Stage-Coach.	George Whitney.

NO.	ARTIST.	TITLE.	OWNER.
196	Moran, Thomas, Newark, N. J.,	*The Mountain of the Holy Cross, Colorado.	Artist.
197	Suydam, J. A. (de- ceased),	Berkeley's Seat, Newport.	New York Academy of Design.
198	Colyer, V., New York,	Pueblo—Indian village.	Artist.
199	Sully, Thomas (de- ceased),	Portrait—Mrs. T. Sully.	Miss Sully.
200	Gray, H. Peters, New York,	The Apple of Discord.	R. Olyphant.
201	Whittredge, W., New York,	Twilight on the Shawangunk Moun- tains.	W. B. Smith
202	Lea, Anna M., Phil- adelphia,	Portrait.	Mrs. Potter.
203	Martin, H., New York,	Adirondacks.	Century Club.
204	Seligman, Mrs. E., Tarrytown, N. J.,	Love and Pride.	Artist.
205	Miller, C. H., New York,	A Long Island Homestead.	F. Sheldon.
206	Waller, Frank, New York,	Tombs of the Caliphs, Cairo.	Mrs. M. Waller.
207	Bierstadt, A., New York,	The Settlement of California, Bay of Monterey, 1770.	Artist.
208	Smillie, George H., New York,	Lake in the Woods.	T. Robertson.
209	Parton, Arthur, New York,	Stirling Castle.	Bryce Gray.
210	Cole, Thomas (de- ceased),	Kenilworth Castle.	J. T. Johnston.
211	Story, G. H., New York,	Echoes of the Sea.	Artist.
212	Waugh, Ida, Phila- delphia,	An Egyptian.	Artist.
213	Story, G. H., New York,	The Young Mother.	Artist.
214	Staigg, R. M., Bos- ton,	*The Chestnut-Gatherer.	Artist.
215	Weir, J. F., New Haven,	The Gun-Foundry.	R. P. Parrott.
216	Rothermel, P. F., Philadelphia,	Amy Robsart interceding for Leices- ter.	C. Blanchard.
217	James, Frederick, Philadelphia,	*Interior of a Smoking-Car.	Artist.
218	Neagle, John (de- ceased),	Portrait of John Taggart, First Presi- dent of Farmers' and Mechanics' Bank, Philadelphia.	Farmers' and Mechanics' Bank.
219	Smith, T. Henry, Philadelphia,	Portrait.	M. Drinker.
220	Healy, G. P. A., Chicago,	Portrait.	
221	Johnson, David, New York,	Old Man of the Mountain, Franconia Notch, N. H.	Mr. Taft.
222	McEntee, J., New York,	Autumn.	George Whitney.
223	Shattuck, A. D., New York,	Lake Champlain.	J. M. Telford.
224	Gardner, Miss E. J., Paris,	Corinne.	Artist.
225	Loop, Mrs. H. A., New York,	Portrait.	Mrs. Alexander.
226	Le Clear, Thomas, New York,	Portrait—Parke Godwin.	Artist.
227	Dix, C. Templeton, New York,	Capri.	Century Club.
228	Hersog, H., Phila- delphia,	*Sentinel Rock, Yosemite.	Artist.
229	Leutse, E. (de- ceased),	The Iconoclast.	R. M. Olyphant.
230	Wood, T. W., New York,	Village Post-Office.	C. S. Smith.

NO.	ARTIST.	TITLE.	OWNER.
231	Kensett, J. F. (deceased),	*Conway Valley, N.H.	R. E. Moore.
232	Hicks, Thos., New York,	General Meade.	Artist.
233	Colyer, V., New York,	Cascade Mountains.	J. M. Stearns.
234	Minor, R. C., New York,	*Evening.	Artist.
235	Hunt, William, Boston,	Portrait.	Mr. Schlesinger.
236	Hart, Jas. M., New York,	A Summer Memory of Berkshire.	E. D. Morgan.
237	Waugh, S. B., Philadelphia,	Lost Jewels found.	Mrs. Joseph Harrison.
238	Bridgeman, F. A., New York,	Nubian Story-Teller.	S. H. Keep.
239	Inman, Henry (deceased),	Hackett as Rip Van Winkle.	Miss C. C. Hackett.
240	Brown, C. V., Philadelphia,	Portrait.	W. J. Clark, Jr.
241	Satterlee, W., New York,	*Marguerite.	Artist.
242	De Luca, P., New York,	A Dish for my Lord.	Artist.
243	Wharton, P. F., Philadelphia,	Perdita—Winter's Tale.	Artist.
244	Van Elten, K., New York,	*Russell Falls, Adirondacks.	Artist.
245	Johnson, David, New York,	*Brook study, Orange Co., N.Y.	Artist.
246	Lippincott, W. H., Philadelphia,	The Ducks' Breakfast.	Artist.
247	Millet, F. D., Boston,	*Turkish Water-Seller.	Artist.
248	Heade, M. J., New York,	*Off the California Coast.	Artist.
249	Moran, Peter, Philadelphia,	Return of the Herd.	Artist.
250	Sonntag, W. L., New York,	*Sunset in the Wilderness.	Artist.
251	Bridgeman, F. A., New York,	Bringing in the Corn.	A. A. Low.
252	Schussele, C., Philadelphia,	The Iron-Worker.	Mrs. Joseph Harrison.
253	Moran, Edward, New York,	Moonlight in New York Bay.	Artist.
254	Hicks, Thos., New York,	Portrait—Dr. Gray.	Mrs. B. Knower.
255	Elliott, C. L. (deceased),	Portrait—Dr. Cheesman.	New York Hospital.
256	Miller, C. H., New York,	High Bridge, New York.	Artist.
257	Weber, Philip, Philadelphia,	*Twilight.	Artist.
258	Henry, E. L., New York,	Old Clock on the Stairs.	R. Gordon.
259	Johnson, Eastman, New York,	*Milton and his Daughters.	Artist.
260	Sartain, Emily, Philadelphia,	*The Reproof.	Artist.
261	Irving, J. B., New York,	Cardinal Wolsey and his Friends.	P. Van Volkenburg.
262	Beard, W. H., New York,	March of Silenus.	Buffalo Fine Art Gallery.
263	Baker, G. A., New York,	Portrait.	Walter Hatch.
264	Eakins, Thomas, Philadelphia,	Portrait—Dr. Rand.	Dr. Rand.
265	Haseltine, W. S., Philadelphia,	*Ruins of Roman Theatre, Sicily.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
266	Lambdin, G. C., Philadelphia,	Roses.	Artist.
267	Homer, Winslow, New York,	The American Type.	Artist.
268	Thompson, A. Wordsworth, New York,	Virginia in the Olden Time.	D. H. McAlphine.
269	Markham, C. C., New York,	My Grandmother (93 years old).	Artist.
270	La Farge, J., New York,	Wreath of Flowers.	G. V. Hecker.

(Annex, Gallery No. 16.)

### AMERICAN SOCIETY OF PAINTERS IN WATER COLORS, OF NEW YORK.

NO.	ARTIST.	TITLE.	OWNER.
271	Hennessey, W. J., New York,	The By-Path.	Mrs. Charles Post.
272	Hennessey, W. J., New York,	An Old Song.	Mrs. C. P. Hemenway.
273	Scott, Wm. Wal- lace, New York,	*Margaretta B. Moore.	Artist.
274	Fenn, Harry, New York,	Old Convent Gate, St. Augustine, Florida.	Joseph Wilde.
275	Burling, Gilbert, New York,	*Study of Owl and Ducks.	Artist.
276	Tiffany, Louis C., New York,	The Old and New Mosques, Ali Hassimin and Sultan El Carmel, Cairo.	J. Holme Maghee.
277	Tiffany, Louis C., New York,	Lazy Life in the East—Gate of the Sub-Treasury, Tangiers.	John Taylor Johnston.
278	Falconer, J. M., Brooklyn,	*No. 78, Cross Street, Boston.	Artist.
279	Smillie, James D., New York,	Study from Nature, Ausable River.	Artist.
280	Tiffany, Louis C., New York,	Dignity in Servitude.	J. T. Smith.
281	Magrath, William, New York,	An Irish Thatched Cottage.	Charles S. Smith.
282	Perry, E. Wood, New York,	*Anne Hathaway's Kitchen.	Artist.
283	Colman, Samuel, New York,	Mosque of Sidi Hallui, Tlemcen, Algiers.	J. Jacob Astor.
284	De Golier, Miss, New York,	Purple Iris.	Artist.
285	De Golier, Miss, New York,	Wild Flowers and Grasses.	Artist.
286	Tiffany, Louis C., New York,	*Street Scene, Dinan.	Artist.
287	Boughton, George H., London,	Normandy Girl caught in a Shower.	Robert L. Stuart.
288	Eaton, J. O., New York,	Out of Mischief.	E. M. Clark.
289	Tiffany, Louis C., New York,	As Good as New. (Swiss scene.)	J. Milbank.
290	Nicoll, J. C., New York,	Moonrise.	Bryan H. Smith.
291	Falconer, J. M., Brooklyn,	*Robert Fulton's House in Philadel- phia, 121 South Second Street.	Artist.
292	Baldwin, A. H., New York,	*An Unskilful Gardener.	Artist.
293	Colman, Samuel, New York,	Corpus Christi Day, Seville, Spain.	John Sherwood.
294	Hart, William, New York,	Mount Madison, N.H.	Nicholas Saltus.
295	Satterlee, Walter, New York,	*One Hundred Years Ago.	Artist.
296	Farrer, Henry,	*Windy Day on Long Island.	Artist.
297	Jones, Alfred,	Feeding Dolly.	Jas. D. Smillie.
298	Richards, William T., Philadelphia,	Old Trees at Atlantic City.	Geo. Whitney.

NO.	ARTIST.	TITLE.	OWNER.
299	Boughton, George H., London,	By the Sea.	Wm. T. Richards.
300	McDonald, Margaret, New York,	*Head of a Shepherd Dog.	Artist.
301	Fisher, Ellen Thayer, New York,	American Velvet Leaf.	Artist.
302	Farrer, Henry, New York,	*Sunrise, East River.	Artist.
303	Colman, Samuel, New York,	Street Scene, Morlaix.	Artist.
304	Perry, E. Wood, Jr., New York,	*A Month's Darning.	Artist.
305	Bricher, A. T., New York,	*Foggy Morning, Grand Menan.	Artist.
306	Homer, Winslow, New York,	*The Trysting-Place.	Artist.
307	Gifford, R. Swain, New York,	*Early Morning.	Artist.
308	Homer, Winslow, New York,	*In the Garden.	Artist.
309	Smillie, James D., New York,	*A Scrub Race on the Western Plains.	Artist.
310	Thomas, Mrs., New York,	Phlox and Larkspur.	Artist.
311	Falconer, J. M., Brooklyn,	*House where Thomas Jefferson lived.	Artist.
312	Thomas, Mrs., New York,	Flowering Almond.	Artist.
313	Scott, Wm. Wallace, New York,	An Old Salt.	J. McDougal.
314	Colman, Samuel, New York,	Street Scene, Dinan.	Artist.
315	Fredericks, Alfred, New York,	The Scare-Crow.	Jas. R. Osgood.
316	Brown, J. G., New York,	Watering-Place Pleasures.	I. T. Williams.
317	Magrath, William, New York,	On the Hill-Side.	A. Foster Higgins.
318	Fredericks, Alfred, New York,	*Romeo and Juliet.	Artist.
319	Neffin, Paul H., New York,	Boy's Dream of Christmas.	Artist.
320	Colman, Samuel, New York,	Street Scene, Caen.	Mrs. Horace Waters.
321	Eaton, J. O., New York,	The Little Prisoner.	Mrs. J. O. Eaton.
322	Colman, Samuel, New York,	Distant View of Rome.	Robert Gordon.
323	Symington, James, New York,	*Dolly's Breakfast.	Artist.
324	Homer, Winslow, New York,	*Flower for the Teacher.	Artist.
325	McDonald, Margaret, New York,	Primroses.	Townsend Cox.
326	Hill, J. W., New York,	Hollyhocks.	Miss H. Ripley.
327	Smith, F. Hopkinson, New York,	*"In the Darkling Wood."	Artist.
328	Nicoll, J. C., New York,	*A Calm Morning.	Artist.
329	Fenn, Harry, New York,	Old Fireplace of the Author of "Home, Sweet Home."	Samuel Wilde.
330	Burt, Martha, New York,	Homely Flowers.	Artist.
331	Farrer, Henry, New York,	*Highlands of the Hudson.	Artist.
332	Bellows, A. F., New York,	Autumn Woods.	S. W. Boccock.
333	Silva, F. A., New York,	Brace's Rock.	I. T. Williams.



NO.	ARTIST.	TITLE.	OWNER.
334	Falconer, I. M., Brooklyn,	*William Penn's Mansion.	Artist.
335	Bricher, A. T., New York,	*Summer Morning, Grand Menan.	Artist.
336	Bridges, Fidelia, New York,	Kingfisher and Catkins.	Wm. B. Kendall.
337	Magrath, William, New York,	Grandad's Visit.	I. T. Williams.
338	Nicoll, J. C., New York,	The Deserted Farm.	Artist.
339	Brown, J. G., New York,	Fresh-Water Sailor.	Rush D. Hawkins.
340	Durand, F. F., New York,	Falls of the Ausable.	Artist.
341	Magrath, William, New York,	"Nora."	I. T. Williams.
342	Bellows, A. F., New York,	The Ferry.	Edward P. Borden.
343	Richards, Wm. T., New York,	Paradise, Newport.	George Whitney.
344	McDonald, Margare- ret, New York,	Fruit.	J. O. Thurston.
345	Gilbert, S. D., New York,	Flowers of the Poets.	Artist.
346	Smith, F. Hopkin- son, New York,	Brook study from Nature.	F. H. Smith.
347	Bricher, A. T., New York,	Gathering Water-Lilies.	Artist.
348	Robbins, Horace W., New York,	*An Old Connecticut Bridge.	Artist.
349	Bellows, A. F., New York,	The Willow Wagon.	John Taylor Johnston.
350	Gifford, R. Swain, New York,	The Roc's Egg.	Walter Brown.
351	Richards, Wm. T., Philadelphia,	Sand-Hills, Atlantic City.	George Whitney.
352	Gilbert, S. D., New York,	Begonia Leaves.	Artist.
353	Hill, J. W., New York,	Blackberries.	I. T. Williams.
354	Colman, Samuel, New York,	Arch of Constantine, Rome.	Artist.
355	Brown, J. G., New York,	Got a Nibble.	Artist.
356	Gifford, R. Swain, New York,	*Venetian Companions.	Artist.
357	Bellows, A. F., New York,	Study of a Head.	Artist.
358	Van Elten, Kruse- man, New York,	*Autumn in the White Mountains.	Artist.
359	Smith, F. Hopkin- son, New York,	Old Cedars, Franconia Mountains.	John C. Townsend.
360	Smillie, George H., New York,	Study, Sentinel Rock, Yosemite Valley.	James Smillie.
361	Falconer, John M., Brooklyn,	*No. 15 Chatham Street, New York.	Artist.
362	Robbins, Horace W., New York,	*New England Autumn.	Artist.
363	Bricher, A. T., New York,	Cliffs at Cape Ann.	Artist.
364	Fenn, Harry, New York,	Toilers of the Sea.	Horace Waters.
365	Perry, E. Wood, Jr., New York,	*Quilting.	Artist.
366	Farrer, Henry, New York,	*Old House on the Hill.	Artist.
367	Bridges, Fidelia, Brooklyn,	*Corner of a Rye-Field.	Artist.
368	Smith, Henry P., New York,	Sultry Morning on Long Island Sound.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
369	Hill, John W., New York,	Study of Quail.	Miss E. Ripley.
370	Bridges, Fidelia, Brooklyn,	*Flock of Snow-Birds.	Artist.
371	Satterlee, Walter, New York,	*Far-away Thoughts.	Artist.
372	Colman, Samuel, New York,	Twilight, Gilead, Maine.	Miss Schuyler.
373	Burling, Gilbert, New York,	Study of a Dead Bird.	F. H. Smith.
374	Fenn, Henry, New York,	Study of Boats.	Samuel Wilde.
375	Van Elten, Kruseman, New York,	*Evening, Long Island Sound.	Artist.
376	Moran, Thomas, Newark, N. J.,	*Hot Springs of the Yellowstone, Wyoming Territory.	Artist.
377	Tiffany, Louis C., New York,	Street Scene in Cairo, Egypt.	George D. Morgan.
378	Gifford, R. Swain, New York,	Egyptian Twilight.	Philip J. Sands.
379	Boughton, George H., London,	Looking out to Sea.	H. B. Smith.
380	Wyant, A. H., New York,	Sunset on the Prairie.	M. R. Schuyler.
381	Bridges, Fidelia, Brooklyn,	Daisies and Clover.	George Whitney.
382	Darley, F. O. C., New York,	Street Scene, Rome.	Artist.
383	Bellows, A. F., New York,	Sunday Afternoon in New England.	H. J. Welling.
384	Nicoll, J. C., New York,	*Foggy Morning on the Coast of Newfoundland.	Artist.
385	Newberry, Rose, New York,	Tuberose.	Artist.
386	Scott, Wm. Wallace, New York,	*Getting Dry.	Artist.
387	Nicoll, J. C., New York,	*On the Gulf of St. Lawrence.	Artist.
388	Homer, Winalow, New York,	*The Busy Bee.	Artist.
389	Scott, Wm. Wallace, New York,	*Fair Daughter of Columbia.	Artist.
390	Gifford, R. Swain, New York,	Guérande.	Mrs. A. B. Stone.
391	Smillie, George H., New York,	Study on the Ausable River, New York.	Artist.
392	Baldwin, A. H., New York,	*Desdemona's House, Venice.	Artist.
393	Magrath, William, New York,	Mussel-Gatherers.	Robert Gordon.
394	Hill, John W., New York,	Landscape.	George W. Lane.
395	Smith, F. Hopkinson, New York,	Study from Nature.	Artist.
396	Harmon, Amelia, New York,	Violets.	Artist.
397	Colman, Samuel, New York,	Rome, looking down the Tiber.	I. T. Williams.
398	Wood, Thomas W., New York,	*The Leader's Call.	Artist.
399	Bellows, A. F., New York,	Safely Landed.	Charles V. Whitten.

(Annex, Gallery No. 6.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
400	Robbins, H. W., New York,	*Study from Nature—Farmington River, Connecticut.	Artist.
401	Rafter, Susie J., New York,	String of Onions.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
402	Marshall, W. E., New York,	Portrait—Abraham Lincoln.	Artist.
403	Sellstedt, L. G., Buffalo,	Portrait of the artist.	Buffalo Fine Art Gallery.
404	Gifford, S. R., New York,	Twilight in the Adirondacks.	C. H. Luddington.
405	Cropey, J. F., New York,	*Old Mill.	Artist.
406	Bispham, H. C., New York,	*The Stampede.	Albert Hayden.
407	Flagg, J. B., New York,	Portrait—Commodore Vanderbilt.	W. H. Vanderbilt.
408	Gifford, S. R., New York,	Santa Maria della Salute, Venice.	Mrs. H. Salisbury.
409	Thompson, Jerome, New York,	*The Old Oaken Bucket.	Jane M. Hodges.
410	Parker, J. A., Brooklyn,	*Sunset in the Adirondacks.	Charles Baxter.
411	Ritchie, A. H., New York,	President Lincoln's Death-bed.	Artist.
412	Vaini, Pietro (de- ceased),	The Jealous Duchess.	Sarony.
413	Shattuck, A. D., New York,	The White Hills in October.	Artist.
414	Hamilton, H., Buf- falo,	The Valley of Fountains.	Artist.
415	La Farge, J., New York,	St. Paul at Athens.	St. Paul's Church, New York.
416	Dolph, J. H., New York,	*The Return from Pasture.	Artist.
417	La Farge, J., New York,	Portrait—Boy and Dog.	Artist.
418	Stone, W. O. (de- ceased),	Portrait.	Union Club, New York.
419	Beard, W. H., New York,	Lo! the Poor Indian.	Artist.
420	McEntee, J., New York,	Scribner's Mill.	Robert Gordon.
421	Baldwin, A. H., New York,	*Baptistery of St. Mark's, Venice.	Artist.
422	Johnson, Frost, New York,	Good Weight.	G. W. Hollis.
423	Johnson, Eastman, New York,	Sabbath Morning.	R. L. Stuart.
424	Granbery, Miss H. A., New York,	*Autumn Flowers.	Artist.
425	MacKnight, Mrs. S. R., New York,	*"When the Cat's away," etc.	Artist.
426	Ogilvie, Clinton, New York,	In the Woods.	Artist.
427	Beard, J. H., New York,	Out All Night.	M. B. Dash.
428	Mathews, W. T., New York,	Dahlias.	Artist.
429	Henry, E. L., New York,	Taking a Night-Cap.	W. O'Brien.
430	La Farge, J., New York,	Water-Lilies.	G. V. Hecker.
431	Cole, Thomas (de- ceased),	*The Cross and the World, Youth.	Vincent Colyer.
432	Cole, Thomas (de- ceased),	*The Cross and the World, Manhood.	Vincent Colyer.
433	Cole, Thomas (de- ceased),	*The Cross and the World, Old Age.	Vincent Colyer.
434	Smith, T. L., New York,	Eve of St. Agnes.	Artist.
435	McEntee, J., New York,	Winter.	J. W. Pinchot.
436	McEntee, J., New York,	November.	Henry James.

NO.	ARTIST.	TITLE.	OWNER.
437	Suydam, J. A. (deceased),	Twilight on the Coast.	R. M. Olyphant.
438	Huntington, D., New York,	Portrait.	Chas. Tracey.
439	Thomson, A. W., New York,	Desolation—St. Cloud.	Artist.
440	Church, F. E., New York,	Chimborazo.	
441	Hays, W. J. (deceased),	*Bison at Bay.	Mrs. W. J. Hays.
442	Elliott, Charles L., (deceased),	The Cavalier.	F. Carpenter.
443	Trumbull, G., Hartford,	The Critical Moment.	W. C. Prime, LL.D.
444	De Haas, M. F. H., New York,	Drifted Ashore in a Fog.	Artist.
445	Warner, Miss W., New York,	Lilies.	Alex. Warner.
446	Coleman, C. C., Rome,	The Troubadour.	Mrs. W. Wilkeson.
447	McEntee, J., New York,	The Woods of Ashokan.	R. Hoe.

(Annex, Gallery No. 6.)

## SCULPTURE

NO.	ARTIST.	TITLE.	OWNER.
448	Lewis, A. J., Philadelphia,	Colossal statue of Washington.	Geo. F. Gordon.
449	Kemys, E., New York,	Coyote and Raven.	Artist.
450	Kemys, E., New York,	Playing Possum.	Artist.
451	Griffin, Julia, New York,	Bust of Rev. Dr. Chapin.	
452	Gifford, Miss I. G., Syracuse, New York,	*Bust of Rev. S. J. May.	Artist.
453	Pardessus, E. V., Brooklyn,	Bust of Hon. E. B. Washburne.	

(Annex, Gallery No. 14.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
454	Huntington, D., New York,	Titian and Charles V.	S. Hawk.
455	Gay, Edward, New York,	*Late Afternoon near Albany.	Dr. S. L. Close.
456	Hicks, Thomas, New York,	E. Delafield, M.D.	New York Society for the Relief of Widows and Orphans.
457	Boughton, G. H., London,	Going to Seek his Fortune.	Geo. Whitney.
458	Kensett, J. F. (deceased),	Lake George.	M. K. Jessup.
459	Whittredge, W., New York,	The Pilgrims of St. Roche.	Winthrop B. Smith.
460	Whittredge, W., New York,	Woods of Ashokan.	S. A. Foot.
461	Gifford, S. R., New York,	San Giorgio, Venice.	R. Butler.
462	Johnson, Eastman, New York,	Bo-peep.	H. Richmond.
463	Colman, Samuel, New York,	Twilight on the Western Plains.	Wm. A. Hamilton.
464	Silva, F. A., New York,	New York Harbor.	J. S. Shultz.
465	Weir, J. F., New Haven,	Lago Maggiore.	J. B. Cauldwell.

NO.	ARTIST.	TITLE.	OWNER.
466	Smith, T. L., New York,	The Deserted House.	W. H. Hamilton.
467	Armstrong, D. M., New York,	*Column of St. Mark's, Venice.	Artist.
468	Lawrie, A., New York,	Monk playing the Violoncello.	H. Marks.
469	Shattuck, A. D., New York,	Sheep and Cattle.	J. H. Sherwood.
470	McEntee, J., New York,	Frosty Morning.	S. D. Coykendall.
471	Bridgeman, F. A., New York,	Women on the Nile.	W. W. Kenyon.
472	Moran, Edward, New York,	*Coming Storm over New York Bay.	R. E. Moore.
473	Bierstadt, A., New York,	The Great Trees, Mariposa Grove, California.	Artist.
474	Durand, A. B., New York,	Brook study.	Artist.
475	Gifford, R. Swain, New York,	*Mosque of Mohammed Ali, Cairo.	Artist.
476	Durand, A. B., New York,	Kaaterskill Clove, Catskill.	Artist.
477	Huntington, D., New York,	Lake George.	D. W. Bishop.
478	Pease, Alonso, Utica,	Portrait—Hon. S. Campbell.	
479	Ward, E. M., New York,	Brittany Peasants Washing Clothes.	Robert Gordon.
480	Kensett, J. F. (deceased),	New Hampshire Scenery.	Century Club.
481	Montalant, J. O. de, Rome,	*Constantinople.	Artist.
482	Oertel, Rev. J. A., Lenoir, N. C.,	The Shadow of a Great Rock in a Weary Land.	Artist.
483	De Haas, M. F. H., New York,	Brig hove to for a Pilot.	Artist.
484	Thom, J. C., New York,	Going to Church, Christmas Eve.	J. M. Burt.
485	Hart, J. M., New York,	Landscape and Cattle.	J. H. Sherwood.
486	Bricher, A. T., New York,	Morning at Narragansett.	J. Suydam.
487	Kappes, Alfred, New York,	*Waiting.	Artist.
488	Bierstadt, A., New York,	Western Kansas.	Walter Richmond.
489	Gifford, S. R., New York,	Tivoli.	C. H. Luddington.
490	Huntington, D., New York,	Philosophy and Christian Art.	Robert Hoe.
491	Whittredge, W., New York,	Rocky Mountains, from the Platte River.	Century Club.
492	Gray, H. Peters, New York,	The Wages of War.	Metropolitan Museum.
493	Mignot, L. R. (deceased),	Snow Scene.	Century Club.
494	Brooks, S., San Francisco,	California Fish.	A. Bierstadt.
495	Huntington, D., New York,	Lake George.	G. N. Stayner.
496	Ritchie, A. H., New York,	Preparing Moses for the Fair.	Artist.
497	Weir, R. W., West Point,	Taking the Veil.	A. C. Alden.
498	Gifford, S. R., New York,	Sunrise on the Sea-Shore.	Robert Hoe.
499	Cropey, J. F., New York,	Italy.	James M. Mills.

*(Annex, Gallery No. 14.)***SCULPTURE.**

NO.	ARTIST.	TITLE.	OWNER.
500	Cusachs, P., New York,	Christ in the Sepulchre.	Artist.
501	Hess, George, New York,	*The Water-Lily.	Artist.
502	Turini, G., New York,	*Angelica and Medora.	Artist.
503	Turini, G., New York,	*The Rainbow.	Artist.
504	Ives, C. B., Rome,	Nursing the Infant Bacchus.	

*(Annex, Gallery No. 8.)***ARCHITECTURAL DESIGNS.**

NO.	ARCHITECT.	TITLE.
505	Cummings & Sears, Boston,	Old South Church.
506	Thayer, S., Boston,	Design for Turner Library, Randolph, Mass.
507	Howe, F.,	Perspective View of the Latin and English High Schools, proposed for the City of Boston—south-west angle.
508	Bryant & Rogers, Boston,	City Hall, Providence, R.I.
509	Mitchell, John A., Boston,	Designs for Library of Congress. (Two drawings.)
510	Bryant & Rogers, Boston,	View of the Connecticut Mutual Life Insurance Company's Building in Hartford, Conn.
511	McArthur, John, Jr., Philadelphia,	View of the New Public Buildings, Philadelphia.
512	Hobbs, J. H., & Son, Philadelphia,	Design of State Capitol.
513	Hobbs, J. H., & Son, Philadelphia,	Memorial to General George G. Meade.
514	Thayer, S. J. F., Boston,	The Mutual Life Insurance Company's Building, New York.
515	Thayer, S. J. F., Boston,	City Hall, Providence, R.I.
516	Cabot & Chandler, Boston,	House at Beverly Farms, Mass.
517	Cabot & Chandler, Boston,	House at Beverly Farms, Mass.
518	Thayer, S., Boston,	Plan of Unitarian Church, South Boston.
519	Moeller, F. G., Nanuet, N.Y.,	Country-seat at Bernardsville, N.J.
520	Thayer, S. J. F., Boston,	Perspective View.
521	Tilden, George T., Boston,	House for Milton Hill.
522	Tilden, George T., Boston,	Block of five houses, Longwood, Mass.
523	Levy, Thomas S., Philadelphia,	Residence on Fortieth Street—elevation.
524	Newcomb, L., & Son, Boston,	Elevation of a country residence.
525	Putnam, J. P., Boston,	Memorial tablet to the organist of a church.
526	Tilden, George T., Boston,	Designs for cottages.
527	Levy, Thomas S., Philadelphia,	Eighth National Bank, Philadelphia.
528	Sturgis & Brigham, Boston,	Interior of a church.
529	Newcomb, L., & Son, Boston,	Design for a corner-lot building.
530	Bryant & Rogers, Hartford,	State Capitol, Hartford, Connecticut.
531	Sturgis & Brigham, Boston,	Chicago Court-house.
532	Sturgis & Brigham, Boston,	Design for a church.
533	Sturgis & Brigham, Boston,	Design for a church.
534	Clark, H. P.,	Restoration of the Tomb of Mausolus.
535	Sturgis & Brigham, Boston,	Five designs for cottages.
536	Putnam, J. P., Boston,	House on Irving Street, Boston.
537	Putnam, J. P., Boston,	House on Marlboro Street, Boston.
538	Ware & Van Brunt, Boston,	Design for a house.
539	Ware & Van Brunt, Boston,	Design for a house.
540	Ware & Van Brunt, Boston,	Memorial Hall of Harvard College.
541	Ware & Van Brunt, Boston,	Southeast view of Memorial Hall of Harvard College.
542	Ware & Van Brunt, Boston,	Vestibule of Memorial Hall of Harvard College.
543	Dudley, Henry, New York,	St. John's Church, Waterbury, Connecticut.

NO.	ARCHITECT.	TITLE.
544	Dudley, Henry, New York,	St. Peter's Church, Auburn, N.Y.
545	Earle & Fuller, Boston,	Interior of All Saints' Church, Worcester, Mass.
546	Cummings & Sears, Boston,	Shillaber Building, Boston.
547	Cummings & Sears, Boston,	Porch of Old South Church.
548	Cabot, Edw. C., Boston,	Design of a house.
549	Cabot, Edw. C., Boston,	House in Brookline, Mass.
550	Putnam, J. P., Boston,	Summer residence.
551	Cady, J. C., New York,	Country house.
552	Cady, J. C., New York,	New York Tribune Building.
553	Upjohn, Richard M., New York,	Trinity Church, Princeton.
554	Upjohn, Richard M., New York,	Stable.
555	Upjohn, Richard M., New York,	St. Paul's Church, Brooklyn.
556	Upjohn, Richard M., New York,	St. Chrysostom Chapel, New York.
557	Upjohn, Richard M., New York,	Central Congregational Church, Boston.
558	Upjohn, Richard M., New York,	Presbyterian Church, Rye, N.Y.
559	Upjohn, Richard M., New York,	Monument.
560	Upjohn, Richard M., New York,	Trinity Parish School.
561	Upjohn, Richard M., New York,	St. Thomas's Church, New York.
562	Upjohn, Richard M., New York,	The West Middle School, Hartford.
563	Upjohn, Richard M., New York,	Part of Central Church.
564	Upjohn, Richard M., New York,	Entrance to Greenwood Cemetery.
565	Upjohn, Richard M., New York,	The State Capitol, Hartford.
566	Upjohn, Richard M., New York,	State-House, Hartford, Conn.
567	Clinton, Charles, New York,	Architectural design.
568	Clinton, Charles, New York,	Architectural design.
569	Upjohn, R. M., New York,	Design of a house.
570	Upjohn, R. M., New York,	Design of a house.
571	Clinton, C. W., New York,	House on Fifth Avenue, New York.
572	Clinton, C. W., New York,	House on Fifth Avenue, corner of Fifty-Eighth Street, New York.
573	Longfellow, W. P. P.,	Soldiers' Memorial at Brookline, Mass.
574	Clinton, C. W., New York,	House on Fifth Avenue, New York.
575	Clinton, C. W., New York,	House on Fifth Avenue, New York.
576	Clinton, C. W., New York,	House on Fifth Avenue, New York.
577	Clinton, C. W., New York,	House on Fifth Avenue, New York.
578	Hunt, R. M., New York,	Architectural design.
579	Clinton, C. W., New York,	Portico of house on Fifth Avenue, New York.
580	Clinton, C. W., New York,	Design for a house.
581	Hunt, R. M., New York,	Design for Central Park.
582	Hunt, R. M., New York,	Design for Central Park.
583	Hunt, R. M., New York,	Entrance to Central Park.
584	Clinton, C. W., New York,	House at Yonkers, on the Hudson.
585	Clinton, C. W., New York,	Architectural design.
586	Clinton, C. W., New York,	Design for a house.
587	Hunt, R. M., New York,	Design for entrance to Central Park.
588	Hunt, R. M., New York,	Design for Central Park.
589	Hunt, R. M., New York,	Design for Central Park.
590	Hunt, R. M., New York,	Design for Central Park.
591	Jennings, A. B., New York,	Country residence.
592	Hunt, R. M., New York,	Design for Union Telegraph Office.
593	Hunt, R. M., New York,	Designs for entrance to Central Park (two drawings).
594	Hunt, R. M., New York,	Designs for the Lenox Library (four drawings).
595	Hunt, R. M., New York,	Designs for a public building.
596	Hunt, R. M., New York,	View of Lenox Library.
597	Hunt, R. M., New York,	Design for Holy Trinity Church.
598	Hunt, R. M., New York,	Design for an iron building.
599	Hunt, R. M., New York,	The Tribune Building, New York.
600	Fernbach, Henry, New York,	Temple on Lexington Avenue.
601	Fernbach, Henry, New York,	Mutual Life Insurance Company's Building, Philadelphia.

NO.	ARCHITECT.	TITLE.
602	Fernbach, Henry, New York,	Centre pavilion of the Mutual Life Insurance Company's Building, Philadelphia.
603	Fernbach, Henry, New York,	Main stairway of Mutual Life Insurance Company's Building, Philadelphia.
604	Fernbach & Kendall, New York,	German Savings Bank, Fourth Avenue, New York.
605	Fernbach, Henry, New York,	New York Staats Zeitung Building, New York.
606	Fernbach & Kendall, New York,	Vault, Salem Fields Cemetery.
607	Post, George B., New York,	Library and Lyceum Building, Morristown, New Jersey.
608	Post, George B., New York,	Front elevation of the Troy Savings Bank, Troy, New York.
609	Post, George B., New York,	View of State Capitol, Hartford, Connecticut.
610	Post, George B., New York,	Western Union Telegraph Company.
611	Congdon, H. M., New York,	Church, Worcester, Massachusetts.
612	Post, George B., New York,	State-House for the State of Connecticut—front elevation.
613	Post, George B., New York,	Side elevation of the Savings Bank, Syracuse, N.Y.
614	Post, George B., New York,	Free Art Gallery—design made for the late Henry Keep, New York.
615	Post, George B., New York,	The Evening Post Building, New York.
616	Post, George B., New York,	New York Hospital, New York.
617	Post, George B., New York,	Presbyterian Hospital, New York.
618	Jennings, A. B., New York,	Design for five houses.
619	Jennings, A. B., New York,	Residence, Englewood, N.J.
620	Jennings, A. B., New York,	Swiss cottage.
621	Cady, J. C.,	Alexander Mission, New York.
622	Gambrill & Richardson, New York,	Buffalo State Asylum for the Insane, Administration Building.
623	Croff & Camp, Saratoga, New York,	Villa at Montreal, N.Y.
624	Croff & Camp, Saratoga, New York,	Villa.
625	Croff & Camp, Saratoga, New York,	Villa at Hudson, N.Y.
626	Croff & Camp, Saratoga, New York,	Villa at Saratoga Springs.
627	Croff & Camp, Saratoga, New York,	Villa at Rhinebeck, N.Y.
628	Croff & Camp, Saratoga, New York,	Design for a grand hotel at Santa Barbara, Cal.
629	Croff & Camp, Saratoga, New York,	Competitive design for Promenade, etc., Congress Spring Park, Saratoga.
630	Smith, M. L.,	Michigan House of Correction, Ionia.
631	Croff & Camp, Saratoga, New York,	Villa at Saratoga Lake.
632	Croff & Camp, Saratoga, New York,	Villa at Burlington, Vt.
633	Croff & Camp, Saratoga, New York,	Villa at Hudson, N.Y.
634	Haight, Ch. C.,	St. Luke's Cathedral, Portland, Me.
635	Post, George B.,	Savings Bank, Williamsburgh, N.Y.
636	Renwick & Sands,	Church of St. Bartholomew, New York.
637	Potter, W. A.,	Design for a church.
638	Potter, W. A.,	Proposed design for Trinity Church, Boston.
639	Dudley, Henry, New York,	St. Peter's Church, Niagara Falls, N.Y.
640	Potter, W. A.,	Design for a church.
641	Congdon, H. M.,	St. Andrew's Church, Harlem, N.Y.
642	Potter, E.,	Harvard Church, Brookline, near Boston
643	Potter, W. A.,	Villa.
644	Potter & Robertson,	Design for a library.
645	Potter & Robertson,	Hotel at Princeton, N.J.
646	Potter & Robertson,	Dormitory of Princeton College.
647	Potter, W. A.,	Princeton College Library.
648	Potter & Robertson,	Berkshire Athenaeum, Pittsfield, Mass.
649	Cady, J. C., New York,	Peabody Museum, Yale College.



NO.	ARCHITECT.	TITLE.
650	Potter, Edward,	Tower of Harvard Church, Brookline, near Boston.
651	Bloor, A. J., New York,	Villa.
652	Bloor, A. J., New York,	Villa.
653	Pfeiffer, Carl, New York,	New Presbyterian Church, Fifth Avenue.
654	Pfeiffer, Carl, New York,	New Presbyterian Church, Fifth Avenue.
655	Pfeiffer, Carl, New York,	New Presbyterian Church, Fifth Avenue.
656	Pfeiffer, Carl, New York,	Osasco Lodge, West Virginia.
657	Congdon, H. M.,	Design for a church.
658	Eppinghausen, C., Terre Haute, Indiana,	Perspective for Indiana State Capitol.
659	Eppinghausen, C., Terre Haute, Indiana,	Flank elevation for Indiana State Capitol.
660	Eppinghausen, C., Terre Haute, Indiana,	Market House and City Hall, Terre Haute, Indiana.
661	Eppinghausen, C., Terre Haute, Indiana,	McKean & Minshall's Bank, Terre Haute, Indiana.
662	Kendall, Edward H.,	Competitive drawing for the German Savings Bank.
663	Eppinghausen, C., Terre Haute, Indiana,	Normal School, Sullivan, Indiana.
664	Eppinghausen, C., Terre Haute, Indiana,	Interior of Indiana State Capitol.
665	Myers, E. E., Detroit, Michigan,	Court-house in Marshall, Michigan.
666	Hallet, William T., New York,	Church in Forty-Fifth Street, New York.
667	Hallet, William T., New York,	First National Bank, Norwich, Conn.
668	Hallet, William T., New York,	Villa near Stamford, Conn.
669	Hallet, William T., New York,	Villa near Stamford, Conn.
670	Hallet, William T., New York,	Macy House, Harrison, N.Y.
671	Hallet, William T., New York,	Residence, Hartford, Conn.
672	Hess, Julius, Detroit,	Michigan Centennial Building, Philadelphia.
673	Myers, E. E., Detroit,	Insane Asylum, Pontiac, Michigan.
674	Myers, E. E., Detroit,	Michigan State Capitol.
675	Myers, E. E., Detroit,	Model farm-house.
676	Myers, E. E., Detroit,	Lansing High School.
677	Hobbs, I. H., & Son, Philadelphia,	Ravensburg Seminary.
678	Le Brun, N., New York,	Masonic Hall, New York City.
679	Le Brun, N., New York,	Sanctuary and Grand Altar of the Cathedral of St. Peter and St. Paul, Philadelphia.
680	Howe, Frank M.,	Country house.
681	Gambrill & Richardson, New York,	Trinity Church, Boston.
682	Gambrill & Richardson, New York,	Competitive design for Town Hall, Brookline, Mass.
683	Moffitt, John M.,	The Delavan Monument at Sleepy Hollow Cemetery.
684	Gambrill & Richardson, New York,	Court-house, Springfield, Mass.
685	Gambrill & Richardson, New York,	Trinity Church, Boston—interior view.
686	Holly, H. Hudson, New York,	Design of villa.
687	Gambrill & Richardson, New York,	Dwelling at Owego, New York.
688	Gambrill & Richardson, New York,	Cottage at Newport, R.I.
689	Gambrill & Richardson, New York,	Competitive design for State-House, Hartford, Conn.
690	Holly, H. Hudson, New York,	Three designs for villas.
691	Sims, H. A. & J. P.,	Design for a villa.
692	Sims, James P.,	Cottage at Atlantic City.
693	Gambrill & Richardson, New York,	Design for the Tower of Trinity Church, Boston.
694	Sims, H. A. & J. P.,	Study for a country church.
695	Sims, H. A.,	Residence at Mount Holly.
696	Sims, James P.,	Design for a church.
697	Hatfield, R. G., New York,	Design for a market.

NO.	ARCHITECT.	TITLE.
698	Hatfield, R. G., New York,	Office building, Broad Street, New York.
699	Hatfield, R. G., New York,	Seaman's Savings Bank, New York.
700	Hatfield, R. G., New York,	Warehouse, Broadway, New York.
701	Hatfield, R. G., New York,	Country house, Scarsdale, New York.
702	Eari & Fuller, Boston,	Hall in a cottage in Worcester.
703	Thayer, S. J. F.,	Architectural design.
704	Pohl, G. R., Philadelphia,	Design for the proposed Centennial Exhibition Building—front on Elm Avenue.
705	Pohl, G. R., Philadelphia,	Design for the proposed Centennial Exhibition Building—diagonal perspective.
706	Pohl, G. R., Philadelphia,	Design for the proposed Centennial Exhibition Building—exterior perspective.
707	Pohl, G. R., Philadelphia,	Design for the proposed Centennial Exhibition Building—interior view.
708	Pohl, G. R., Philadelphia,	Design for the proposed Centennial Exhibition Building—end elevation.
709	Luce, C. S., Boston,	Tomb of Governor Hayden, Haydenville, Mass.
710	Fairfax, J. S.,	State Capitol of West Virginia.
711	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—ground plan.
712	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—block plan.
713	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—side elevation.
714	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—front elevation.
715	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—Art Gallery.
716	Fairfax, J. S.,	Premiated design for the International Exhibition, Philadelphia—Memorial Building.
717	Mitchell, J. A.,	Architectural design for a memorial window.
718	Beeler, J., New York,	Ceilings.
719	Thayer, S. J. F.,	Somerville High School Building.
720	Fairfax, J. S.,	Proposed Miller Manual School, Virginia.
721	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Design of a villa.
722	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Dining-room decorations.
723	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Dining-room decorations.
724	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Design for building.
725	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Original building with alteration.
726	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Women's Pavilion.
727	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Centennial Building.
728	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Interior of Judges' Hall.
729	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Architectural design.
730	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Judges' Hall.
731	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Horticultural Hall.
732	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Interior of Horticultural Hall.
733	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Interior.
734	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Memorial Hall.
735	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Competitive design, Vienna Exhibition.
736	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Architectural design.
737	Schwarzmann, H. J., & Kafka, H., Philadelphia,	Architectural design (house).

NO.	ARCHITECT.	TITLE.
738	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Memorial Hall.
739	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Memorial Hall.
740	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Interior of Memorial Hall.
741	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Original building with alteration.
742	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Original design for the International Exhibition, 1876.
743	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Judges' Hall.
744	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Board of Finance Building.
745	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Centennial Bank.
746	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Architectural design.
747	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Residence in Munich.
748	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Designs for villas.
749	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Dining-room decorations.
750	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Dining-room decorations.
751	Schwarzmunn, H. J., & Kafka, H., Philadelphia,	Designs for building.
752	Howe, Frank M.,	House in Cambridge.
753	Fehmer, Carl, Boston,	Howe Building, Boston.
754	Richards, Henry,	House at Beverly Farms, Mass.
755	Richards, Henry,	Homœopathic Hospital.
756	Hartwell, Swasey & Co., Bos- ton,	Design for proposed Central Church, Fall River
757	Cummings & Sears,	Montgomery Building.
758	Cabot & Chandler, Boston,	Soldiers' monument at Brookline, Mass.
759	Howe, F. M.,	Proposed City Hall, Providence, R. I.
760	Whitney, L. W., Boston,	Residence on Fairfield Street, Boston.
761	Whitney, L. W., Boston,	Residence on Boylston Street, Boston.
762	Fehmer, Carl, Boston,	Building for the Simmons Estate, Boston.
763	Hartwell, Swasey & Co., Bos- ton,	Dexter Building, Pawtucket, R. I.
764	Luce, Clarence S., Boston,	Monument at Brookline, Mass.
765	Richards, Henry, Boston,	Proposed High School, Providence, R. I.
766	Longfellow, W. P. P., Boston,	Design for a house.
767	Whitney, Lewis W., Boston,	Child's book-case and cabinet.
768	Newcomb, L., & Son,	Library.
769	Earle & Fuller, Boston,	Buildings at Worcester, Mass.
770	Earle & Fuller, Boston,	Dining-room.
771	Earle & Fuller, Boston,	All Saints' Church, Worcester.
772	Longfellow, W. P. P.,	Hall in Fiskdale.
773	Longfellow, W. P. P.,	Town library.

(Annex, Gallery No. 12.)

## LOAN COLLECTION OF OIL PAINTINGS.

J.	ARTIST.	TITLE.	OWNER.
4	Vandyke, Anthony,	*The Crucifixion.	Mrs. M. Garner.
5	Erpikum, Paris,	Portrait—Madame Houssaye.	C. B. Moore.
6	Domenichino,	*Judith.	G. H. Schneider.
7	Cabanel, Alex., Paris,	Francesca di Rimini.	Mrs. A. E. Kidd.
8	Madrazo, Madrid,	Portrait—Mrs. D. M. Barringer.	L. M. Barringer.
9	Gudin, T.,	*Marine.	A. Bierstadt.
0	Madrazo, Madrid,	Portrait—D. M. Barringer.	L. M. Barringer.

NO.	ARTIST.	TITLE.	OWNER.
781	Makart, Hans, Vienna,	*Abundance of the Sea.	A. & C. Kaufmann.
782	Schidone,	*Charity.	Estate of Dr. Chapman.
783	Navelot, Victor,	*Cavalry Charge.	Dr. George Reuling.
784	Robert, Leopold (deceased),	Pilgrims on their Way to Rome.	Miss S. L. Guerber.
785	Vernet, Jos. (attributed to),	Landscape.	E. S. Conner.
786	(Unknown),	Old Woman's Head.	F. L. Robbins.
787	Murillo (attributed to),	St. Francis in his Cell.	E. S. Conner.
788	Muraton, A., Paris.	*The Devotee.	L. Rabillon.
789	Wolf, G.,	*Portia.	Dr. George Reuling.
790	Dubufe, E., and Bonheur, Rosa, Paris,	*Autumn. (Figure by Dubufe, sheep by Rosa Bonheur.)	Dr. George Reuling.
791	Brion, G., Paris,	*Bridal Procession in Alsace.	M. Knoedler & Co.
792	Max, Gabriel, Munich,	*The Anatomist.	Demas Barnes.
793	Sain, E. A., France,	Italian Girl.	Theo. Lyman.
794	Van Schendel, P., Brussels,	*The Annunciation.	Demas Barnes.
795	Nicoll, E., London,	Paying the Rent.	F. O. Day.
796	Saltau, L., Paris,	Consolation.	Mrs. E. V. Machette.
797	Volk, Douglas, Chicago,	In Brittany.	Artist.
798	Verboeckhoven, E., Brussels,	Driving Home the Sheep.	W. J. Bates.
799	Kunath, Oscar, Munich,	*Still Life.	Artist.
800	Pauwels, F., Weimar,	The New Republic.	W. S. Stewart.
801	Duval, V., Paris,	Gallery of Apollo, Louvre.	
802	Nys, P. (deceased),	*Dutch Interior.	T. C. A. Dexter.
803	Dürer, Albert,	St. Jerome.	E. V. Machette.
803a	Del Sarto, Andrea,	*St. Andrew bearing his Cross. *Christ stilling the Tempest.	Mrs. L. G. Franklin.
804	De Haas, J. H. L., Brussels,	*Cattle in the Meadows of Holland.	Myers & Hedian.
805	Seltz, Prof. Otto, Munich,	*Faun and Nymph.	Myers & Hedian.
806	Makart, Hans, Vienna,	*Abundance of the Earth.	A. & C. Kaufmann.
806a	Porporati (deceased),	*Adoration of the Magi.	P. F. Cooper.
807	Courbet, Gustave, Paris,	*The Huntsman.	A. H. Reitlinger.
808	Courbet, Gustave, Paris,	*Castle of Chillon, Lake Leman (1).	A. H. Reitlinger.
809	Courbet, Gustave, Paris,	*Castle of Chillon, Lake Leman (2).	A. H. Reitlinger.
810	Courbet, Gustave, Paris,	*The Bather.	A. H. Reitlinger.
811	Wouwermans (attributed to),	War Scene.	E. S. Conner.
812	Maccari, C., Rome,	Fond Memories.	J. Raymond Claghorn.
813	Maccari, C., Rome,	Music hath Charms.	J. Raymond Claghorn.
814	Ortmans, Miss F. A., Paris,	An Opening in the Forest of Fontainebleau.	John Welsh.
815	West, Benjamin (deceased),	Moses Striking the Rock.	Dr. H. Billings.

(Annex, Gallery No. 12.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
816	Gould, T. R., Florence,	The West Wind.	Demas Barnes.

NO.	ARTIST.	TITLE.	OWNER.
817	Gould, M. S., Florence,	Water Babies.	
818	Gould, T. R., Florence,	The Rose.	
819	Gould, T. R., Florence,	The Lily.	

(Annex, Gallery No. 10.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
820	Mayer, F. B., Baltimore,	The Continentals.	Artist.
821	Darrah, Mm. S. T., Boston,	*Sunset.	Artist.
822	Healy, G. P. A., Chicago,	Portrait—Hon. E. B. Washburne.	
823	Birch, Thos. (deceased),	Marine.	
824	Tompkins, Clementina, Paris,	*The Little Musician.	Artist.
825	Seitz, Otto, Munich,	*Neptune's Bridal (Loan Collection).	Myers & Hedian.
826	Tilton, J. R., Rome,	*The Lagoons of Venice.	Artist.
827	Tompkins, Clementina, Paris,	*An Artistic Début.	Artist.
828	Coleman, C. C., Rome,	Nuremberg Towers—fifteenth century.	H. Sampson.
829	Graham, W., Venice,	*Angle Column of Ducal Palace.	Artist.
830	Gregory, J. Elliot, Paris,	Portrait.	Dr. J. S. Delavan.
831	Bloomer, H. B., Paris,	El Dorado.	Artist.
832	Chase, W. M., Munich,	"Keying up"—The Court Jester.	S. M. Dodd.
833	Inman, H. (deceased),	Portrait—Bishop R. C. Moore.	Trinity Chapel, N.Y.
834	Healy, G. P. A., Chicago,	Portrait—Lord Lyons.	
835	Du Bois, C. E., Paris,	*Palisades, Hudson River.	Artist.
836	Bierstadt, A., New York,	Yosemite Valley.	Artist.
837	Coleman, C. C., Rome,	The Young Monk.	J. H. Coleman.
838	Sully, Thos. (deceased),	Portrait—Mrs. T. Sully.	Miss Sully.
839	Benson, Eugene, Rome,	*Interior of St. Mark's, Venice.	Artist.
840	Healy, G. P. A., Chicago,	Portrait—Ex-President Thiers.	
841	Brown, H. B.,	The East Highlands.	
842	Vedder, Elihu, Rome,	The Greek Actor's Daughter.	H. Sampson.
843	Robinson, Thos., Boston,	Bull's head.	H. C. Angell.
844	Parker, S. H., New York,	Portrait—Mrs. H. W. Hills.	Artist.
845	Lang, Louis, New York,	Landing of the Market-Boat at Capri.	Artist.
846	Spencer, Mrs. Lily M., Newark, N.J.,	*Earth, Air, and Water.	Artist.
847	West, P. B., Cleveland,	Still Life—game.	Mrs. M. L. Dickinson.
848	Andrews, E. F., Paris,	Portrait.	Dr. S. H. Linn.
849	Thouron, H., Philadelphia,	Charlotte Corday—The Eve of her Execution.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
850	Tait, J. R., Cincinnati,	Summer.	Artist.
851	Coleman, C. C., Rome,	Still Life.	J. H. Warren.
852	McEntee, J., New York,	Virginia during the War.	Mrs. H. W. Cary.
853	Andrews, E. F., Paris,	Little Leonie.	Artist.
854	Elliott, C. L. (deceased),	Portrait—Ex-Governor Bouck.	City Hall, New York.
855	Meeks, Eugene, Florence,	Little Nell and her Grandfather.	Artist.
856	Andrews, E. F., Paris,	Portrait—General Torbert.	
857	Andrews, E. F., Paris,	Portrait.	Dr. B. J. Bing.
858	Tait, J. R., Cincinnati,	Autumn.	Artist.
859	Montalant, J. O. de, Rome,	*The Parthenon, Athens.	Artist.
860	Marchant, E. D., Philadelphia,	Portrait—H. C. Carey.	J. G. Fell.
861	Andrews, E. F., Paris,	Portrait.	W. E. Macalister.
862	Shirlaw, Walter, Munich,	Tuning the Bell.	J. F. Gookins.
863	Shirlaw, Walter, Munich,	Feeding the Poultry.	J. F. Gookins.
864	Middleton, S. G., Paris,	Sketch at Cernay, near Paris.	Artist.
865	Tilton, J. R., Rome,	Kem Ombres, Upper Egypt.	Hon. H. P. Baldwin.
866	Willard, A. M., Cleveland,	Yankee Doodle.	Artist.
867	Rothermel, P. F., Philadelphia,	Trial of Sir Harry Vane.	J. L. Claghorn.
868	Senat, P. L., Paris,	*Moonrise near Rotterdam.	Artist.
869	Coman, Mrs. C. B., New York,	*A French Village.	Artist.
870	Weir, J. F., New Haven,	*The Confessional.	E. E. Salisbury.

(Annex, Gallery No. 10.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
871	Bartholdi, Paris,	Proposed Monument to Washington.	
872	Ezekiel, M., Rome,	Grace Darling.	L. J. Workum.
873	Ezekiel, M., Rome,	Sailor Boy.	L. J. Workum.
874	Ezekiel, M., Rome,	Infant Mercury.	L. J. Workum.

(Annex, Gallery No. 28.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
875	Smith, F. Hill, Boston,	*Sunset on the Giudecca, Venice	Artist.
876	Daniels, G. F., Boston,	*Crown Point and the Narrows, Lake Champlain.	Artist.
877	Benson, Eugene, Rome,	*The Reverential Anatomist.	Artist.
878	Staigg, R. M., Boston,	*Cornice Road, Italy.	Artist.
879	Brown, W. W., Boston,	*Spurwink River.	Artist.
880	Higgins, George F., Boston,	*Forest Interior, Adirondacks.	M. M. Farrer.

NO.	ARTIST.	TITLE.	OWNER.
891	Staigg, R. M., Boston,	*Empty Nest.	Artist.
892	Shapleigh, F. H., Boston,	Kenilworth.	J. C. Howe.
893	Millet, F. D., Boston,	*In the Bay of Naples.	Artist.
894	Millet, F. D., Boston,	Lady in Costume of 1740.	Mrs. E. S. Keith.
895	Shapleigh, F. H., Boston,	On the Seine.	J. C. Howe.
896	Cole, J. Foxcroft, Boston,	Twilight, Melrose Highlands.	J. Sayles.
897	De Blois, F. B., Boston,	October in Canada.	T. F. Brooke.
898	Cole, J. Foxcroft, Boston,	*Cows Ruminating.	Doll & Richards.
899	Enneking, J. E., Boston,	*Moonlight on the Giudecca, Venice.	Artist.
900	Tuckerman, S. S., Boston,	*Beach at Hastings.	Artist.
901	Monks, J. A., Boston,	*Trees in Blossom.	Artist.
902	Champney, Benjamin, Boston,	*Artists' Brook, North Conway, N.H.	Artist.
903	Elwell, D. J., Boston,	*Downs near Ostend.	Artist.
904	Cole, J. Foxcroft, Boston,	*Pastoral Scene.	Doll & Richards.
905	Allston, Washington (deceased),	Isaac of York—"Ivanhoe."	Boston Athenæum.
906	Porter, B. C., Boston,	Portrait.	Artist.
907	Brackett, W. M., Boston,	*The Rise.	Artist.
908	Brackett, W. M., Boston,	*The Leap.	Artist.
909	Brackett, W. M., Boston,	*The Last Struggle.	Artist.
900	Brackett, W. M., Boston,	*Landed.	Artist.
901	Key, J. R., Boston,	The Golden Gate, San Francisco.	Artist.
902	Hinckley, T. H., Boston,	*End of the Chase.	Artist.
903	Freeman, J. E., Boston,	Study for an Angel.	C. C. Perkins.
904	Porter, B. C., Boston,	The Hour-Glass.	Artist.
905	Cole, J. Foxcroft, Boston,	*Coast Scene in Normandy.	Artist.
906	Elwell, D. J., Boston,	Port of Antwerp.	S. E. Sawyer.
907	Robinson, T., Boston,	New England Farmer.	John Foster.
908	Weeks, E. L., Boston,	*Arab Story-Teller.	Artist.
909	Gay, Walter, Boston,	*Fall Flowers.	Artist.
910	Boott, Eliz., Boston,	Portrait.	Artist.
911	Baker, Miss M. K., Boston,	*Azaleas.	Artist.
912	Alexander, Fanny, Boston,	Madonna.	James Davis.
913	Ames, Jos., Boston,	Portrait—President Felton.	Harvard University.
914	Staigg, R. M., Boston,	Portrait.	
915	Staigg, R. M., Boston,	Portrait.	
916	Billings, E. T., Boston,	*Portrait—Wendell Phillips.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
917	Jarvis, Melicent, Boston,	Portrait.	Artist.
918	Tuckerman, S. S., Boston,	*United States Frigate "Constitution" escaping from the British Fleet, 1812.	Artist.
919	Staigg, R. M., Boston,	Portrait.	
920	Parker, Edgar, Boston,	Portrait—J. G. Whittier.	Artist.
921	Hale, Ellen D., Boston,	Boy Reading.	Mrs. E. E. Hale.
922	Robinson, T., Boston,	Dog's head.	
923	Hunt, W. M., Boston,	The Boot-Black.	J. H. Wright.
924	Robinson, T., Boston,	Sheep in Pasture.	William Appleton.
925	Ames, Joseph, Boston,	Portrait—Daniel Webster.	B. S. Moulton & Co.
926	Brown, G. L., Boston,	*Sunset—Genoa.	Artist.
927	Norton, W. E., Boston,	*Fog on the Grand Banks.	Artist.
928	Champney, Benjamin, Boston,	*At Glenora, N.Y.	Artist.
929	Billings, E. T., Boston,	Wheelwright Shop.	Artist.
930	Longfellow, E. W., Boston,	*Old Mill at Manchester, Mass.	Artist.
931	Stuart, Gilbert (deceased),	Portrait—Fisher Ames.	Harvard University.
932	Stuart, Gilbert (deceased),	Portrait—Judge Story.	Harvard University.
933	Stuart, Gilbert (deceased),	Portrait—Bishop Chevenix.	Mrs. H. Greenough.
934	Harding (deceased),	Portrait—Washington Allston.	S. Batchelder.
935	Bannister, E. M., Providence,	*Under the Oaks.	Artist.
936	Champney, J. W., Boston,	"Speak, Sir!"	J. L. De Wolf.
937	Champney, Benjamin, Boston,	*Old Willows at Manchester, Mass.	Artist.
938	Darrah, Mrs. S. T., Boston,	*Lake Champlain.	Artist.
939	Allston, Washington (deceased),	Head of a Jew.	Boston Athenaeum.
940	Stuart, Gilbert (deceased),	Portrait—Mrs. E. C. Cushing.	Mrs. L. L. Chickering.
941	Gerry, S. L., Boston,	*American Tourists.	Miss E. J. Gerry.
942	Petersen, J. E. C., Boston,	Collision at Sea.	Manufacturers' Insurance Company.

(Annex, Gallery No. 28.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
943	French, D. C., Concord, Mass.,	The Minute-Man, 1775.	Doll & Richards.
944	Whitney, Annie, Boston,	Sketch—Charles Sumner.	Artist.
945		Portrait bust.	
946	French, D. M., Newburyport, Mass.,	Bust—J. G. Whittier.	Artist.
947	Whitney, Annie, Boston,	Roma.	Artist.



*(Annex, Gallery No. 42.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
948	Kendricks, D. T., Boston,	*Foggy Day at the Beach.	Artist.
949	De Blois, F. B., Boston,	Licola, Italy.	Artist.
950	Leland, Henry, Boston,	Portrait.	H. Thouron.
951	Way, C. Granville, Paris,	An Old Friend.	Artist.
952	Martin, Miss L. E., Boston,	Flowers (panel).	Mrs. Martin.
953	Champney, J. W., Boston,	Grandma's Pet.	T. Wiggleworth.
954	Martin, Miss L. E., Boston,	Flowers (panel).	Mrs. Martin.
955	Jarvis, Melicent, Boston,	Jeannette in her Studio.	Artist.
956	Snowe, Francis, Boston,	A Cloudy Day.	G. H. Chickering.
957	Robinson, T., Bos- ton,	*An Old Team.	Artist.
958	Willard, William, Sturbridge, Mass.,	Portrait.	Artist.
959	Cobb, Darius, Bos- ton,	Portrait.	Cyrus Cobb.
960	Holmes, P. H., Gardiner, Me.,	The Adirondacks from Vermont.	Artist.
961	Bacon, Henry, Paris,	*The Boston Boys and General Gage, 1775.	
962	Willard, W., Bos- ton,	Portrait—Charles Sumner.	E. L. Bates.
963	Wild, H. G., Boston,	*Banks of the Nile.	Artist.
964	Cole, J. G. (de- ceased),	Portrait—Commodore D. Turner.	J. V. P. Turner.
965	Ulke, Henry, Washington,	Portrait—Charles Sumner.	Artist.
966	Weber, Carl, Phila- delphia,	*Morning in the Alleghanies.	Artist.
967	Ulke, Henry, Washington,	*Portrait—General Grant.	Artist.
968	Pierson & Poincy,	Firemen's Parade in New Orleans, 1871.	W. McNeely.
969	Weber, Carl, Phila- delphia,	*Reichenbach Falls, Switzerland.	Artist.
970	Andrews, E. F., Paris,	Portrait.	W. T. Carter.
971	Fowler, T. T., Phil- adelphia,	Work for the Day is Over.	Artist.
972	Raupp, Carl,	*Approaching Storm.	Dr. George Reuling.
973	Bierstadt, A., New York,	California Spring.	Artist.
974	Kaufmann, Theo- dore, Washing- ton,	Influence of Electricity on Human Culture (ten subjects).	Artist.
975	Smith, Miss Mary, Jenkintown, Pa.,	Cluck and Chickens.	
975a	Wilson, Oregon (de- ceased),	*Woman's Devotion.	Dr. W. A. Wilson.
976	Moore, H. H., New York,	Almeh, a Dream of the Alhambra.	Artist.
977	Brown, G. L.,	*Niagara by Moonlight.	H. N. Barlow.
978	Guthers, Carl, St. Louis,	Awakening Spring.	Artist.
979	Birch, Thomas (de- ceased),	Perry's Victory on Lake Erie.	Thomas Birch.

NO.	ARTIST.	TITLE.	OWNER.
980	Johns, C. M., Pittsburg,	"To Tubal-Cain came many a one, And each one prayed For a strong steel blade."	Artist.
981	Noble, T. S., Cincinnati,	The Tramp.	Artist.
982	Boyle, F. T. L., Brooklyn,	*The Prayer of Judith.	Artist.
983	Bartlett, Jennie M., Minneapolis,	*Callas and Amaryllis (two panels).	Artist.

(Annex, Gallery No. 42.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
983a	Calverly, C., N. Y.,	Bronze bust of John Brown.	Union League Club.
984	Richards, D., Chicago,	Satisfaction.	
985	Fillans, Miss W., Wisconsin,	Portrait bust.	Chief-Justice Dixon, of Wisconsin.
986	Richards, D., Chicago,	Disgust.	
987	Whitney, Annie,	The Model.	
987a	Kretschman, E. A., Philadelphia,	The "Continental" Soldier and two portrait bronze medallions.	

(Annex, Gallery No. 40.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
988	Volkmar, Chas., Jr., Baltimore,	The Passing Shower (near Vichy, France).	Artist.
989	Rothermel, P. F., Philadelphia,	Macbeth meditating the Murder of Duncan.	Thomas Dolan.
990	Coleman, C. C., Rome,	Interior of St. Mark's, Venice.	Artist.
991	Healy, G. P. A., Chicago,	Portrait—Princess of Roumania.	E. B. McCagg.
992	Lea, Anna M., Philadelphia,	Portrait.	F. Macauley.
993	Furness, W. H., Jr. (deceased),	Portrait.	H. H. Furness.
994	Morrell, Mrs. I. Robinson, Paris,	*Washington Welcoming the Provision-Train.	Artist.
995	Winters, Miss Anna, Philadelphia,	*Daisies.	Artist.
996	Galvan, Mrs. S. M., Philadelphia,	*Roses.	Artist.
997	Willcox, W. H., Philadelphia,	One Hundred Years Ago.	Artist.
998	Spencer, Mrs. Lily M., Newark, N. J.,	*"Will you have some fruit?"	Artist.
999	Galvan, Mrs. S. M., Philadelphia,	*Roses.	Artist.
1000	Shaw, Annie C., Chicago,	*An Illinois Prairie.	Artist.
1001	Gunnison, Miss M. D., New York,	Portrait—Captain J. W. Gunnison.	Artist.
1002	Lambdin, J. R., Philadelphia,	Portrait—Bishop Alonzo Potter.	
1003	Hill, Thomas, San Francisco,	Home of the Eagle.	John A. Faull.
1004	Julio, E. B. D., New Orleans,	Gathering the Sugar-Cane.	Artist.
1005	Bierstadt, A., New York,	Mt. Hood, Oregon.	

NO.	ARTIST.	TITLE.	OWNER.
1006	Guthers, Carl, St. Louis,	"Ecce Homo."	
1007	Waugh, S. B., Philadelphia,	Portrait.	
1008	Wilson, Oregon, (deceased),	Portrait.	Dr. Wilson.
1009	Kaufmann, Theodore, Washington,	Admiral Farragut.	
1010	Rothermel, P. F., Philadelphia,	*Hypatia, the Neo-Platonic Philosopher, stripped and torn to pieces by the Christian mob of Alexandria.	Artist.
1011	Furness, W. H., Jr. (deceased),	Portrait.	H. H. Furness.
1012	Coleman, C. C., Rome,	Venice.	Mrs. W. Wilkeson.
1013	Furness, W. H., Jr. (deceased),	Portrait—Rev. W. H. Furness.	Rev. W. H. Furness.
1014	Peale, Rembrandt (deceased),	Portrait of the artist.	Mrs. R. Peale.
1015	Stanley, D. M., Detroit,	The Indian Signal.	Artist.
1016	Galvan, Mrs. S. M., Philadelphia,	*Flowers.	Artist.
1017	Elkins, H. R., Chicago,	Shasta, an extinct volcano of North California.	
1018	Sword, J. B., Philadelphia,	Trenton Falls, N.Y.	Artist.
1019	Hill, Thomas, San Francisco,	*Yosemite Valley.	Artist.
1020	Galvan, I. Ernest, Philadelphia,	*Roses (two panels).	Artist.
1021	Smith, T. Henry, Philadelphia,	Mind and Matter.	
1022	Audubon, J. J. (deceased),	*Covey of Blackcock.	Edward Harris.
1023	Simon, H., Philadelphia,	"Steady."	Artist.
1024	Hersog, H., Philadelphia,	*Norwegian Waterfall in Hallingdal.	Artist.
1025	Smith, Xanthus, Jeakintown, Pa.,	The Kearsarge and Alabama.	
1026	Eberhardt, W., Boston,	Portrait—Rear-Admiral Winslow, former Commander of the Kearsarge.	Citizens of Boston, who intend to present it to Memorial Hall.
1027	Wild, H., Boston,	El Majo de Granada.	H. H. Furness.

(Annex, Gallery No. 40.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
1028	Mundhenk, A., Cincinnati,	"Auld Lang Syne."	
1029	Kemys, E., New York,	*Panther and Deer.	Artist.
1030	Swayne, W. M., Philadelphia,	*Bust of W. H. Seward.	Artist.
1031	Swayne, W. M., Philadelphia,	*Bust of Abraham Lincoln.	Artist.
1032	Swayne, W. M., Philadelphia,	*Bust of Salmon P. Chase.	Artist.
1033	Hess, Geo., New York,	Bust of Bayard Taylor.	Artist.

(Annex, Gallery No. 30.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
• 1034	Ropes, Joseph, Philadelphia,	Tivoli.	Artist.
1035	Stewart, J. L., Philadelphia,	Marie.	W. S. Stewart.
1036	Healy, G. P. A., Chicago,	Portrait.	
1037	Schussele, C., Philadelphia,	Zeisberger preaching to the Indians.	J. Jordan.
1038	Trotter, N. H., Philadelphia,	*Wounded Buffaloes pursued by Prairie Wolves.	Artist.
1039	Moran, Thos., Newark, N.J.,	"Fiercely the red sun descending burned his way along the heavens."	Artist.
1040	Haseltine, W. S., Rome,	Natural Arch at Capri.	
1041	Briscoe, F. D., Philadelphia,	Wreckers.	
1042	Fassett, Mrs. C. Adèle, Wash- ington,	Portrait—Chief-Justice Waite.	
1043	Gardner, Miss E. J., Paris,	The Fortune-Teller.	
1043a	King, Geo. W., Philadelphia,	View in the Tyrol.	
1044	Lambdin, G. C., Philadelphia,	On a Summer Sea.	Artist.
1045	Leland, Henry, Boston,	Portrait.	C. M. Leland.
1046	Harrison, Henry, Jersey City,	Portrait.	Miss Belle Dodd.
1047	Moran, Thos., Newark, N.J.,	*Valley of the Rio Virgen, Utah.	Artist.
1048	Rothermel, P. F., Philadelphia,	*Christian Martyrs in the Colos- seum.	Artist.
1049	Moran, Thos., Newark, N.J.,	*Dream of the Orient.	Artist.
1050	Eakins, Thos., Philadelphia,	Portrait.	Artist.
1051	Leland, Henry, Boston,	Portrait.	C. M. Leland.
1052	Machen, W. H., Toledo, O.,	Still Life—Ruffed Grouse.	Artist.
1053	Craig, Thos. B., Philadelphia,	Indian Summer.	Artist.
1054	Rothermel, P. F., Philadelphia,	The Virtuoso.	Artist.
1055	Mayer, F. B., Bal- timore,	The Attic Philosopher.	Artist.
1056	Coleman, C. C., Rome,	The Troubadour.	Henry Sampson.
1057	Smith, T. Henry, Philadelphia,	Portrait.	Mrs. Jos. Harrison.
1058	Healy, G. P. A., Chicago,	Portrait.	E. B. McCagg.
1059	Lea, Anna M., Philadelphia,	*A Patrician Mother.	Artist.
1060	Randle, Fred., Philadelphia,	Flowers.	
1061	Porter, S. C., Philadelphia,	Study of a Child.	
1062	Heaton, A. G., Philadelphia,	Washington as Ambassador at Fort Duquesne.	
1063	Kunath, Oscar, Munich,	*"He won't bite."	Artist.
1064	Kunath, Oscar, Munich,	Portrait.	

NO.	ARTIST.	TITLE.	OWNER.
1065	Richards, F. De B., Philadelphia,	Campagna di Roma.	Artist.
1066	Coleman, C. C., Rome,	Grand Canal, Venice.	James Bayley.
1067	Waugh, S. B., Philadelphia,	Portrait	
1068	Lea, Anna M., Philadelphia,	*Genevieve de Brabant.	Artist.
1069	Bonfield, W. V. der V., Philadelphia,	Drifting Snow.	
1070	Way, A. J. H., Baltimore,	Grapes (two panels).	
1071	John, Joseph, Philadelphia,	The Minstrel.	
1072	Moran, Peter, Philadelphia,	Settled Rain.	
1073	Weir, J. F., New Haven,	Portrait.	
1074	Peale, Rembrandt (deceased),	Washington; from life.	Chas. P. Herring.
1075	Waters, Mrs. S. C., Bordentown, N. J.,	*Still Life—Mallard Ducks.	Artist.
1076	Rosenthal, T. E., Munich,	"Remind me not that I alone Am cast out from the Spring."	W. E. Schmertz.
1077	Smith, Russell, Jenkintown, Pa.,	Mount Vernon in 1836.	
1078	Waugh, Ida, Philadelphia,	Cosette.	Artist.
1079	Wood, G. B., Jr., Germantown, Pa.,	Freddy Flechtenstein's Shop.	Artist.
1080	Smith, Russell, Jenkintown, Pa.,	Cave at Cheltenham Hills.	
1081	Pettit, G. W., Philadelphia,	Cremation of Julius Caesar.	C. J. Harrah.
1082	Winner, W. E., Philadelphia,	Portrait.	Artist.
1083	Rothermel, P. F., Philadelphia,	The Landsknecht.	Matthew Baird.
1084	Williams, I. L., Philadelphia,	*October.	Artist.
1085	Weir, J. F., New Haven,	The Column of St. Mark's, Venice.	Geo. W. Jewett.
1086	Volk, Douglas, Chicago,	Vanity.	Artist.

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
1087	Rogers, Randolph, Rome,	Atala.	
1088	Passage, A. du, Paris,	Return from the Boar-Hunt.	Mrs. J. H. Johnson.
1089	Richards, D., Chicago,	Il Penseroso.	
1090	Resiers, P. C., Pittsburg,	Bust—Col. T. A. Scott.	
1091	Hess, Geo., New York,	*Lizzie's Pet.	Artist.
1092	Richards, D., Chicago,	Portrait bust.	Mrs. Laird Colyer.

(Annex, Gallery No. 44.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1093	Reynolds, Sir Joshua (deceased),	Portrait—Mr. Groves.	Mrs. A. S. Hughes.
1094	Reynolds, Sir Joshua (deceased),	Portrait—Mrs. Groves.	Mrs. A. S. Hughes.

NO.	ARTIST.	TITLE.	OWNER.
1095	Peale, C. Wilson (deceased),	Portrait of Washington; from life.	Andrew L. Robinson.
1096	Wertmuller (de- ceased),	Portrait of Washington; from life.	S. Wagner.
1097	Smibert, John (de- ceased),	Portrait—P. Faneuil.	Massachusetts Historical Society.
1098	Kneller, Sir God- frey (deceased),	*Portrait—Lord Baltimore; pre- sented to the City of Annapolis by Queen Anne.	Titian R. Peale.
1099	Plantou, Mrs. (de- ceased),	Triumph of America, or the Treaty of Ghent.	Miss Plantou.
1100	Truman, E. (de- ceased),	Portrait—Thos. Hutchinson.	Massachusetts Historical Society.
1101	Sargent, Henry (deceased),	Portrait—General B. Lincoln.	Massachusetts Historical Society.
1102	(Unknown.)	Portrait—Alexander Hamilton.	E. Newland.
1103	Tenney, U. D., New Haven, Conn.,	Portrait—General Stark.	City of Manchester, N.H.

(Annex, Gallery No. 44).

## WATER COLORS, DRAWINGS, ETC.

NO.	ARTIST.	TITLE.	OWNER.
1104	Herrick, H. W., Manchester, N. H.,	Grave of General Stark (water color).	City of Manchester, N.H.
1105	Herrick, H. W., Manchester, N. H.,	General Stark at Bunker Hill (water color).	City of Manchester, N.H.
1106	Herrick, H. W., Manchester, N. H.,	General Stark's Last Charge at Ben- nington (water color).	City of Manchester, N.H.
1107	Herrick, H. W., Manchester, N. H.,	General Stark as Trapper, captured by the Indians (water color).	City of Manchester, N.H.
1108	Herrick, H. W., Manchester, N. H.,	General Stark at Trenton (water color).	City of Manchester, N.H.
1109	McMurtrie, Miss L. G., Boston,	Geraniums (water color).	H. McMurtrie.
1110	Bliss, Lucia S., Boston,	*Lilium Auratum (water color).	Artist.
1111	Story, Annie B., Boston,	*Carnations (water color).	Artist.
1112	Bartlett, G. H., Boston,	Oak leaf (drawing).	Artist.
1113	Story, Annie B., Boston,	*Cherokee Roses (water color).	Artist.
1114	Bliss, Lucia S., Boston,	*Campanula.	Artist.
1115	Bliss, Lucia S., Boston,	Double Poppies.	Artist.
1116	Eddy, G. F., Bos- ton,	*Gladiolus.	Artist.
1117	Bliss, Lucia S., Boston,	*Fringed Gentian and Golden Rod.	Artist.
1118	Bliss, Lucia S., Boston,	*Cardinal Flowers.	Artist.
1119	McMurtrie, Miss L. G., Boston,	Rhododendrons.	Artist.
1120	Robbins, Ella, Boston,	*Vase of Flowers.	Artist.
1124	Stengel, G. A., Boston,	Stuart's Washington (pen drawing).	G. Kaan.
1125	Alexander, Fan- ny, Boston,	Nella Feeding her Doves (pen drawing).	Rev. Arthur Lawrence.
1126	Steinhaus, Wil- liam, New York,	Vienna Exhibition. (Two drawings.)	
1127	Brückner, Henry,	Commemorative Allegory (etching).	Henry Schille.
1128	Steinhaus, Wil- liam, New York,	Wm. C. Bryant (pen drawing).	

NO.	ARTIST.	TITLE.	OWNER.
1129	Alexander, Fan- ny, Boston,	September (pen drawing).	Caroline Brewer.
1130	Bartlett, G. H., Boston,	Details from Andernach Church Door.	Artist.
1131	Benham, C. C., New Haven,	*Nubian Girl (burnt in wood).	J. H. Benham, Jr.
1132	Galindo, R. E.,	Arabesque design.	Ion Perdicaris.
1133	Hyatt, Mrs. Del- ia, Boston,	Stork Tower in Reutlingen (water color).	Mrs. A. Hyatt.
1134	Wood, G. B., Philadelphia,	Rittenhousetown (water color).	Artist.
1135	Cabot, E. C., Bos- ton,	Puddingstone Boulders, Brookline, Mass. (water color).	Mrs. S. Cabot.
1136	Eddy, G. F., Bos- ton,	*Drummond Phlox (water color).	Artist.
1137	Sterling, Mrs. C. H.,	Oak leaves (water color).	Artist.
1138	Cabot, E. C., Bos- ton,	Baker's Read (water color).	Mrs. S. Cabot.
1139	Catlin, George (deceased),	One hundred and twenty-six Illus- trations of Indian Life.	Heirs of G. Catlin.
1140	Peacon, W. V., New York,	*Declaration of Independence (pen- manship).	
1141	Venino, Frans, New York,	Fall of Carthage (crayon).	Artist.
1142	Cohen, T. T., Phil- adelphia,	The First Centennial (crayon).	Artist.
1143	Doolittle & Corte- lyn, New York,	*Soliloquy of Friar Pacificus, Golden Legend (illumination).	Artist.
1144	Doolittle, E. S., New York,	*Prayer to the Virgin (illumination).	Artist.
1145	Greator, Mrs. Eliza, New York,	*Eighteen pen drawings illustrating Old New York.	Artist.
1146	Faber, Hermann, Philadelphia,	Daniel in the Lions' Den (water color).	Artist.
1147	Burns, C. M., Philadelphia,	The Power behind the Throne (water color).	Artist.
1148	Eakins, Thomas, Philadelphia,	*Base-Ball (water color).	Artist.
1149	Eakins, Thomas, Philadelphia,	*Whistling for Plover (water color).	Artist.
1150	Field, R. (de- ceased),	Thomas Jefferson—water color sketch from life, in the first year of his Presidency.	T. J. Miles.
1151	Hartwick, Her- mann, New York,	American Cedar Forest (water color).	Artist.
1152	De Rose, A. L.,	Portrait—D. Crockett; with Auto- graph (water color).	John Durand.
1153	Robbins, Ella, Boston,	*Primroses (water color).	Artist.
1154	Miller, E. F., Co- lumbus, O.,	Landscape (water color).	
1155	Robbins, Ella, Boston,	*Pansies (water color).	Artist.
1156	Darrah, Mrs. S. T., Boston,	*After the Storm (water color).	Artist.
1157	Miller, E. F., Co- lumbus, O.,	Winter (water color).	
1158	Brown, G. L., Boston,	*Ariccia, near Rome (water color).	Artist.
1159	Wood, G. B., Jr., Germantown,	The Old Tinker (water color).	Artist.
1160	Brown, G. L., Boston,	*Study from Nature (water color).	Artist.
1161	Hurtal, P.,	Sketch (water color).	Artist.
1162	Adams, Miss E., Boston,	Study of a Head (water color).	Artist.

*(Annex, Gallery No. 44.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1163	Peale, C. Wilson (deceased),	Portrait—Mrs. General Cropper.	J. Cropper.
1164	West, Benjamin (deceased),	Portrait—Stephen Carmick, Signer of the Non-Importation Act.	Louis Carmick.
1165	Vanderlyn, J. (de- ceased),	Portrait—General Armstrong.	William Astor.
1166	Dunlap, William (deceased),	Portrait—Thomas Eddy.	New York Hospital.
1167	Morse, S. B. F. (deceased),	Portrait—General Lafayette.	City Hall, New York.
1168	Sully, Thomas (deceased),	Portrait—Commodore Decatur.	City Hall, New York.
1169	Jarvis, J. W. (de- ceased),	Portrait—Commodore Macdonough.	City Hall, New York.
1170	Trumbull, John (deceased),	Portrait—General Washington.	City Hall, New York.
1171	Waldo (deceased),	Portrait—General Jackson.	City Hall, New York.
1171a	Jarvis, J. W. (de- ceased),	Portrait—Commodore Perry.	City Hall, New York.

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
1172	Broome, Isaac, Pittsburg,	Base-Ball Players (Parian).	Ott & Brewer.
1173	Park, R. H., Flor- ence,	*Birdie (bust).	Artist.
1174	Park, R. H., Flor- ence,	*Summer.	Artist.
1175	Park, R. H., Flor- ence,	*Purity.	Artist.
1176	Park, R. H., Flor- ence,	*First Boots.	Artist.
1177	Park, R. H., Flor- ence,	*Gardener's Daughter.	Artist.
1178	Park, R. H., Flor- ence,	*First Sorrow.	Artist.
1179	Park, R. H., Flor- ence,	*Sunshine.	Artist.
1180	Park, R. H., Flor- ence,	*Sappho (statuette).	Artist.
1181	Park, R. H., Flor- ence,	*Good-Morning.	Artist.
1182	Park, R. H., Flor- ence,	*Sappho (bust).	Artist.
1183	Park, R. H., Flor- ence,	*Rosebud.	Artist.
1183a	Rush (deceased),	Bust of Washington (clay model from life).	Alfred Young.
1183b	McDonald, W.,	Bust of Washington.	
1183c	Este, Mary God- dard, Cincinnati,	Iolanthe, King René's blind daughter.	Artist.
1183d	Henning, H. D. A., Baltimore,	Happy Days in the Valley of Nysa.	Artist.
1183e	Jacquier, Eli, Cin- cinnati,	*Bust of Shakspeare.	

*(Memorial Hall, Grand Central Hall, Gallery B.)*

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
1184	Story, W. W., Rome,	*Medea.	
1185	Foley, Miss M., Rome,	*Jeremiah.	Artist.



# UNITED STATES.

52

NO.	ARTIST.	TITLE.	OWNER.
1186	Turner, W. G., Florence,	*Fisherman's Daughter.	Artist.
1187	Connelly, P. F., Florence,	*Horse's head.	Artist.
1188	Haseltine, J. H., Rome,	*Fortune.	Artist.
1189	Connelly, P. F., Florence,	*Queen Philippa.	Artist.
1190	Connelly, P. F., Florence,	Thetis thinking how she may regain the birthright of her son Achilles.	New York Museum.
1191	Connelly, P. F., Florence,	*Lady Clare.	Artist.
1192	Powers, Preston, Florence,	*Bust of Charles Sumner.	Artist.
1193	Connelly, P. F., Florence,	*Helen of Troy.	Artist.
1194	Connelly, P. F., Florence,	*Diana Transforming Actæon.	Artist.
1195	Connelly, P. F., Florence,	*The Thread of Life.	Artist.
1196	Connelly, P. F., Florence,	*Viola.	Artist.
1197	Lawlor, John, London,	*The Emigrant.	Artist.
1198	Haseltine, J. H., Rome,	*Spring Flowers.	Artist.
1199	Haseltine, J. H., Rome,	*Lucretia.	Artist.
1200	Haseltine, J. H., Rome,	*Captivity.	Artist.
1201	Foley, Miss M., Rome,	*Cleopatra.	Artist.
1202	Turner, W. G., Florence,	*Transition.	Artist.
1203	Haseltine, J. H., Rome,	*Cleopatra.	Artist.
1204	Handley, M., Rome,	America Honoring her Fallen Brave.	
1205	Stone, Horatio, Dr. (deceased),	Bronze vase.	J. C. Hoadley.
1206	Story, W. W., Rome,	*Beethoven.	Artist.
1207	Handley, M., Rome,	*Spring Crowning herself with Flow- ers.	
1208	Handley, M., Rome,	*Giuto.	
1209	Handley, M., Rome,	*Autumn Flowers.	Artist.
1210	Haseltine, J. H., Rome,	Duke of Leuchtenberg (equestrian statuette).	G. H. Schneider
1211	Haseltine, J. H., Rome,	*Lucia di Lammermoor.	Artist.
1212	Park, R. H., Florence,	The Mechanic—bronze portrait statue.	
1213	Palmer, E. D., Albany,	Bronze statue of Robert Living- ston.	
1214	Stone, Horatio, Dr. (deceased),	Two bronze vases.	J. C. Hoadley.
1215	Bailey, J. A., Philadelphia,	Equestrian statue of Antonio Guz- man Blanco, President of Vene- zuela.	
1216	St. Gaudens, Aug., New York,	Bust of Hon. William Evarts.	
1217	Rogers, Ran- dolph, Rome,	Ruth.	James Douglas.
1218	Ream, Vinnie, Washington,	*Spirit of the Carnival.	Artist.
1219	Mills, Theodore A.,	Eve.	
1220	Ream, Vinnie, Washington,	*The West.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
1231	Smith, R. C.,	Bust of President J. M. Sturtevant, of Illinois College.	
1232	Ream, Vinnie, ' Washington,	Miriam.	
1233	Rogers, Ran- dolph, Rome,	Nydia, the Blind Girl of Pompeii.	James Douglas.
1234	Ream, Vinnie, Washington,	Bust of Senator Morrell.	
1235	Warren, O. L., New York,	Medallion of Edwin Forrest.	
1236	Harnisch, A. B., Philadelphia,	Bust of William J. Mullen.	W. W. Mullen.
1237	Connelly, P. F., Florence,	St. Martin Dividing his Cloak.	Mrs. B. Lawrence.
1237a	Fettweis, C. L., Jr., Cincinnati,	*Cast Away.	Artist.

(Memorial Hall, Grand Central Hall, Gallery B.)

### OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1238	Van Reuth, E., Baltimore,	*Homage of America to the Spirit of her Institutions.	Artist.
1238a	Stuart, Gilbert,	The original portrait, from life, of Washington, painted in 1796. The only picture from life by Stuart, except the unfinished portrait in the Boston Athenæum.	J. Delaware Lewis.
1238b	Travers, W. T. K.,	Abraham Lincoln,	W. P. Webster.

(Memorial Hall, Grand Central Hall, Gallery B.)

### ARCHITECTURAL MOSAICS.

NO.	ARTIST.	TITLE.	OWNER.
1239	Leonardi, Valew- ski, Rubicondi, Italy,	Memorial Altar.	Ordered for St. Clement's Church, Philadelphia.

(Memorial Hall, Gallery K.)

### SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
1230	Calverley,	Bas-relief likeness of Peter Cooper.	
1231	Lewis, Miss Ed- monia,	*Death of Cleopatra.	Artist.
1232	Harnisch, A. E., Philadelphia,	Statue of Wm. J. Mullen.	W. W. Mullen.
1233	Fillans, Miss W.,	Medallion portrait.	
1234	Foley, Miss M., Rome,	Two medallions of Mary and William Howitt.	Artist.
1235	Turner, W. G., Florence,	*Night.	Artist.
1236	Turner, W. G., Florence,	*Morning.	Artist.
1237	Meynen, F., Philadelphia,	Statuette of the Madonna.	Artist.
1238	Tassara,	*Singing Angels (alto-relievo).	Stephen H. Perkins.
1239	Graef, Jos., New York,	Model of a monument to Dr. Wales.	
1240	Graef, Jos., New York,	*Saint Mary.	Artist.
1241	Graef, Jos., New York,	*The First Step.	Artist.
1242	Harnisch, A. E., Philadelphia,	Sketch for a monument to the Pris- oner's Friend.	Artist.
1243	Graef, Jos., New York,	*Infant Bacchus.	Artist.
1244	Foley, Miss M., Rome,	Medallion—Mrs. T. B. Read.	
1244a	Ream, Vinnie, Washington,	Bust of a child.	

NO.	ARTIST.	TITLE.	OWNER.
1245	Ghetti, Antonio, New York,	*Monument to a child.	
1246	Gerardin, G., Philadelphia,	*Bouquet.	
1247	Meyer, H., New York,	Portrait of a boy.	
1248	Meyer, H., New York,	Portrait of a girl.	
1248a	Waugh, Ida, Phil- adelphia,	Saint Agnes.	L. de V. Judd.
1248b	Gordon, Joseph C., Philadelphia,	Inspiration (bas-relief).	Artist.
1248c	Gordon, Joseph C., Philadelphia,	Rosebud (alt-relief).	Artist.
1248d	Kappler, Tobias, New Haven, Conn.,	Medallion—Professor Agassiz.	
1249	Hartley, J. S., New York,	The Young Samaritan.	Artist.
1250	Benton, J. Dean, Philadelphia,	Metal model of Independence Hall.	E. C. Knight.

## STAINED GLASS.

NO.	EXHIBITOR.	TITLE.
1250a	Falck, Otto F., & Co., Boston,	The Prodigal Son.
1250b	Slack, S., & Co., Glass Stainers, Orange, N.J.,	Specimens of figure subjects and arabesque designs. This firm has on exhibition in Memorial Hall some fine specimens of their work in antique and rolled cathedral glass, an article used extensively by them in the production of their principal work, such as figure, symbolic, heraldic, and decorated windows, for both ecclesiastical and domestic purposes.
1250c	West, Samuel, Boston,	Specimens of figure subjects and arabesque designs.
1250d	Gibson, Geo., Philadelphia,	Saint Michael.

*(West Arcade, on Façade of Memorial Hall.)*

## SCULPTURE.

NO.	EXHIBITOR.	TITLE.
1251	Eyre, M. Dickerson, Florence,	*Leda.
1252	Eyre, M. Dickerson, Florence,	*Rebecca.
1253	Eyre, M. Dickerson, Florence,	*Hercules and Antæus.
1254	Eyre, M. Dickerson, Florence,	*Ruth.
1255	Eyre, M. Dickerson, Florence,	*Juno.
1256	Eyre, M. Dickerson, Florence,	*Genius of the Vatican.
1256a	Seelig, M. J., & Co., Williams- burg, N.Y.,	*Esculapius (spelter).
1256b	Seelig, M. J., & Co., Williams- burg, N.Y.,	Cupid (spelter).
1256c	Seelig, M. J., & Co., Williams- burg, N.Y.,	A vase (spelter).

*(East Arcade, on Façade of Memorial Hall.)*

## SCULPTURE.

NO.	EXHIBITOR.	TITLE.
1257	Eyre, M. Dickerson, Florence,	*Psyche.
1258	Eyre, M. Dickerson, Florence,	*Bust of Michael Angelo.
1259	Eyre, M. Dickerson, Florence,	*Vulcan.
1260	Eyre, M. Dickerson, Florence,	*Bust of Dante.
1261	Eyre, M. Dickerson, Florence,	*Autumn.
1262	Eyre, M. Dickerson, Florence,	*Spring.
1263	Eyre, M. Dickerson, Florence,	*Hebe

*(Memorial Hall, Gallery Z.)***DRAWINGS, ETCHINGS, ETC.**

NO.	ARTIST.	TITLE.	OWNER.
1264	Darley, F. O. C., Claymont, Del.,	Puritans Barricading their Houses against the Indians (crayon).	Artist.
1265	Martin, Mrs. L. E., Boston,	*Sweet Home (porcelain painting).	Artist.
1266	Martin, Mrs. L. E., Boston,	*Flowers (porcelain painting).	Artist.
1266a	Cabot, E. C., Bos- ton,	Woods at Beverly Farms (water color).	Mrs. C. Storrow
1267	Reich, Jos.,	Portrait (charcoal).	Artist.
1268	Ferris, S. J., Phil- adelphia,	Portrait (crayon).	Artist.
1269	Fabronius, D. C., Boston,	Portrait (crayon).	Artist.
1270	Alexander, Miss F., Boston,	A Prayer.	G. W. Wales.
1271	Moran, Thomas, Newark, N.J.,	*Hiawatha and the Serpent.	Artist.
1272	Moran, Thomas, Newark, N.J.,	*Hiawatha and Nokomis.	Artist.
1273	Moran, Thomas, Newark, N.J.,	*Death of Kwasind.	Artist.
1274	Moran, Thomas, Newark, N.J.,	*Hiawatha's Fasting.	Artist.
1275	Moran, Thomas, Newark, N.J.,	*Hiawatha's Childhood.	Artist.
1276	Moran, Thomas, Newark, N.J.,	*Death of Tawpak.	Artist.
1277	Darley, F. O. C., Claymont, Del.,	A Merciful Man is Merciful to his Beast.	Artist.
1278	Schell, F. B., Phil- adelphia,	On the Susquehanna (drawing on wood).	Artist.
1279	Stokes, John,	Dead Blue Jay.	Artist.
1280	Forbes, Edwin, New York,	*Life Studies of the Great Army. (Forty etchings.)	Artist.
1281	Fabronius, D. C., Boston,	Portrait of a baby (crayon).	Artist.
1282	Munsig, G. C.,	Portrait in crayon.	Artist.
1283	Reed, J. C.,	Portrait of a lady (crayon).	Artist.
1284	Ellis, J. C.,	Portrait of a little girl (crayon).	Artist.
1285	Burdick, H. R.,	*Portrait in crayon.	Artist.
1286	Fabronius, D. C., Boston,	*Portrait of H. R. H. the Duchess of Edinburgh.	
1287	Swain,	Portrait of child (crayon).	Artist.

*(Memorial Hall, Gallery Y.)***OIL PAINTINGS.**

NO.	ARTIST.	TITLE.	OWNER.
1288	Schwörer, A., Munich,	*A Surprise.	Stroofer & Kirchner.
1289	Wagner, A., Mu- nich,	*Charlotte-Race.	Stroofer & Kirchner.
1290	Mayer, A. L., Mu- nich,	*Marguerite.	Stroofer & Kirchner.
1291	Kayser, E., Mu- nich,	*The Convalescent.	Stroofer & Kirchner.
1292	Epp, R., Munich,	*The Young Mother.	Stroofer & Kirchner.
1293	Köckert, F., Mu- nich,	*Autumn.	Stroofer & Kirchner.
1294	Moreau, A., Paris,	*Field Flowers.	M. Knoedler & Co.
1295	Fichel, E., Paris,	*The Naturalist.	M. Knoedler & Co.
1296	Merle, H., Paris,	*Charity.	M. Knoedler & Co.

NO.	ARTIST.	TITLE.	OWNER.
1297	Meyer von Bremen,	The Rabbit-Seller.	M. Knoodler & Co.
1298	Cortasso, O., Rome,	*Difficult to Rhyme.	M. Knoodler & Co.
1299	Beard, J. H., New York,	*"There's many a slip," etc.	M. Knoodler & Co.

## CRAYONS.

NO.	ARTIST.	TITLE.	OWNER.
1300	Kurtz, W., New York,	Six crayon portraits.	Artist.

## ART APPLIED.

*(Memorial Hall, Gallery Y.)*

NO.	EXHIBITOR.	SUBJECT.
1301	Stroefzer & Kirchaer, New York,	Eleven engravings illustrating Faust and Marguerite, after A. L. Mayer. Fine Art Books.
1302	Knoodler, M., & Co., New York,	Chromos and engravings.
1303	Speroni, J. L., New York,	Engravings on silver.
1304	Zoeffner, L., New York,	Cameos.
1305	Paquet, A. C., Philadelphia,	Medals.
1306	Bachman, H. G., Philadelphia,	Ivory carvings.
1307	Overbaugh, A. W., New York,	Engraving on metal.
1308	Lebrethon, Jules, New York,	Cameos and medallions.

*(Memorial Hall, Gallery X.)*

NO.	EXHIBITOR.	SUBJECT.
1309	Frang, L., & Co., Boston,	Views of the Yellowstone National Park, and other specimens of chromo-lithography.
1310	Kaufmann, A. & C., New York,	Moonlight on the Nile, and other specimens of chromo-lithography; wall and ceiling decoration of Favy's Japanese felted fabric.
1311	Bonet, Louis, New York,	Cameos.
1312	Hirrlinger, C. W., New York,	Enamels and enamel paintings.
1313	Barber, W. & C., Philadelphia,	Medals.
1314	Mitchell, Henry, Boston,	Two frames of specimens of stone gems and impressions of seals.
1315	Rowe, George A., 1037 Walnut Street, Philadelphia,	Three frames of specimens of engraving on precious stones and impressions of seals.

*(Memorial Hall, Second Story, Corridor.)*

NO.	EXHIBITOR.	SUBJECT.
1316	Bencke & Scott, New York,	"One Hundred Years Ago"—chromo-lithograph.
1317	Witteaman Bros., New York,	Centennial Memorial.
1318	Cliver & Elway, Altoona, Pa.,	Frame composed of fifteen thousand pieces of wood, constructed without nail, screw, or glue.

*(Memorial Hall, Second Story, Room No. 1.)*

NO.	EXHIBITOR.	SUBJECT.
1319	Cohn, Louis H., & Co., New York,	Imitations of natural woods (wall paper). Natural wood prints. Impressions taken from all kinds of wood on paper, equal to veneer.
1320	Goth, Anthony, Bethlehem, Pa.,	Oil-painted washable wall paper. Specimens of wall and ceiling decoration.
1321	Rumbold, George W., New York,	Imitations of marbles (wall paper).
1322	Hassard, R. T., Philadelphia,	Specimens of wall and ceiling decorations in paper and frescoed panels.
1323	Stoll, J. A., New York,	Decorative bas-reliefs.
1324	Hore, William, Philadelphia,	Inlaid book-case and work-boxes.
1325	Lange & Bros., St. Louis,	Inlaid show-case composed of one hundred and twenty thousand pieces of wood.

*(Memorial Hall, Second Story, Room No. 2.)*

NO.	EXHIBITOR.	SUBJECT.
1326	Hopson, Wm., Eyerett, Mass.,	Painted imitations of woods, and two tablets imitations of inlaid marbles.
1327	McGregor, G. S., Cleveland, O.,	Specimens of oak, walnut, and rosewood grained.
1328	National Chromo Co., Philadelphia,	Specimens of chromo-lithography.
1329	Gruger, Pearson E., Lancaster, Pa.,	Monumental engraving on marble.
1330	Foerster, Edmund, & Co., New York,	Breakwater at Calais, and other specimens chromo-lithography.
1331	Colton, Zahm, & Roberts, New York,	Beatrice Cenci, and other specimens of chromo-lithography.
1331a	Hollerbach & Dieffenbach, New York,	Frames and specimens of mouldings.
1332	Frickenhaus, Otto, New York,	Designs for crochet and embroidery.
1333	Beeler, J. C., New York,	Ornamental painting on glass.
1334	Beeler, J. C., New York,	Pastel drawing of an Indian's head.
1335	Hoefel, Ferd., St. Louis,	Flowers—painting on glass.

*(Memorial Hall, Second Story, Room No. 3.)*

NO.	EXHIBITOR.	SUBJECT.
1336	Latham, J., & Co., Boston,	Holy Family, and other specimens of chromo-lithography.
1337	Demorest, W. J., New York,	Old Oaken Bucket, and other specimens of chromo-lithography, and one frame of wood engraving engraved by Redman & Kenney.
1338	Graf Bros., Philadelphia,	Specimens of chromo-lithography, illustrating method of production.
1339	Kelley, Wm. J., New York,	Specimens of ornamental typography.
1340	Hunter, Thos., Philadelphia,	Tegner's Draps, and other specimens of chromo-lithography.
1341	Hoover, Jos., Philadelphia, Pa.,	The Changed Cross, and other specimens of chromo-lithography, with two of the original oil paintings. Chromos and oil paintings framed. Publisher of fine chromos, wholesale lowest rates. Office and salesroom, 1129 Chestnut Street, south-west corner of Thirteenth and Buttonwood Streets.
1342	Hoen, A., & Co., Baltimore,	The Continentals, and other specimens of lithography and chromo-lithography.

*(Memorial Hall, Second Story, Room No. 4.)*

NO.	EXHIBITOR.	SUBJECT.
1343	Perrine, W. H., D.D., Albion, Mich.,	Chromo-lithograph of Palestine.
1344	Vandusen, R., Weedsport, New York,	Four frames of lithographs (animals).
1345	Dwyer, Edward, Philadelphia,	Painting and inlaid mother-of-pearl on glass. Moonlight.
1346	Smith, Levi F., Philadelphia,	Chromo-lithograph—Proclamation of Emancipation.
1347	Palm, Chas., & Co., New York,	Specimens of C. Schuessler's patent transfer ornaments on glass.
1348	Mayer, Ferd., New York,	Mammoth crayon lithograph. Three specimens.
1349	Swank, J. W., Washington,	Free-hand penmanship.
1350	Meyer, James, Jr., New York,	Penmanship and pen drawings.
1351	Barlow, Joel H., Hudson City, N.J.,	Penmanship and pen drawing.
1352	Brückner, H., New York,	Roger Williams's Reception by the Indians (drawing).
1353	Brückner, H., New York,	Discovery of the Hudson River (drawing).
1354	Lockwood, Randolph & Co., New York,	Specimens of artificial boxwood for wood-engraving.
1355	Schmidt, Geo. S., Saratoga, N.Y.,	Silhouettes.
1356	North, Miss R. M., Philadelphia,	Bouquet drawn on silk.

NO.	EXHIBITOR.	SUBJECT.
1357	Frost, Philadelphia,	Sketches.
1358	Stehlin, Joseph, New York,	*Ancient altar carvings.
1359	Smith, G. B., Jersey City,	Shield composed of army badges worn in the late war.
1360	Pierce's Business College, 39 South Tenth Street, Philadelphia, Pa., Thomas May Pierce, M.A., Principal and Proprietor, Rev. John Thompson, Business Manager, residence 2002 Brandywine Street,	Specimens of penmanship and pen drawing. Brief description of the objects on exhibition in Pennsylvania Educational Hall. I. Penmanship.—(a.) Seven (7) sets of resolutions engrossed by order of the Philadelphia Board of Public Education at different times during the past five years, and borrowed from the owners for the purpose of showing the high order of talent employed by the College. (b.) The improvement in writing of fourteen hundred (1400) pupils of the College, showing the success of the penman as a teacher. (c.) A "reward of merit" engrossed by the penman, the like of which is given once a month to the pupil who makes the most improvement in writing during the month. (d.) A large piece of "Specimens of Spencerian Penmanship," and a set of resolutions, complimentary of the Principal, written by the penman, and a "deceiving picture" made with pen, brush, and pencil by the professor of drawing, each illustrating the power and ability of the executor. (e.) A piece of ornamental penmanship with a bouquet in the centre drawn with the pen, which with the drawings in the work done for the Board of Education, show the penman's skill in pen-drawing. II. Book-keeping.—(a.) A case of samples of Merchandise used by the pupils of the College in the transaction of business among themselves in the Actual Business Department, thus furnishing each pupil with an original and independent set of transactions for his books. (b.) Samples of College Currency used in the payment of bills, together with copies of the various business papers used by the students. III. Course of Instruction.—(a.) A small piece of lettering naming the subjects taught. (b.) A Diploma setting forth the subjects of examination for graduation. IV. Objects of the Institution and Classes who patronize it.—A large piece of penmanship setting forth the same in detail. Particular merit which the Exhibitor claims for his Exhibit.—I. The highest order of talent in the penman in all the departments of work done with the pen. II. Superior plans for the improvement of the writing of pupils, in addition to the excellence of the teacher. III. Ingenious and successful plans for teaching Book-keeping and imparting a sound, practical, and economical preparation of young men for business life.

(Memorial Hall, Second Story, Room No. 5.)

1361	Centennial Commission,	Competitive designs of the Centennial Buildings.
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(Annex, Gallery No. 1.)

### STAINED GLASS.

	EXHIBITOR.	SUBJECT.
1	2 Fitzpatrick, A., & Co., Staten Island,	*Christ in the Temple, Saint George and Saint Augustine.
1	3 Fitzpatrick, A., & Co., Staten Island,	*The Holy Family.
1	4 Fitzpatrick, A., & Co., Staten Island,	*The Adoration of the Magi.
1	5 Mittermaier, Max, Brooklyn,	Christ amid the Doctors.
1	6 West, Samuel, Boston,	Saint Paul.
1	7 McPherson, W. J., & Co.,	Knight in armor—after Giorgione.

## ENGRAVINGS AND LITHOGRAPHS.

*(Annex, Gallery No. 18.)*

NO.	EXHIBITOR.	SUBJECT.
1366	Nichols, H. H., Washington,	Frame of surgical engravings on wood; frame of zoological engravings on wood.
1369	Mayer, Charles, Jersey City,	Frame of engravings on wood.
1370	Harley, J. S., New York,	Nine frames of engravings on wood (pictorial).
1371	Smart, T. L. & R. M., New York,	Frame of engravings on wood (mechanical).
1372	Muller, R. A., Brooklyn,	Frame of engravings on wood (pictorial).
1373	Redman & Kenney, New York,	Specimens of engravings on wood.
1374	Faas, Frederick, Philadelphia,	Specimens of engravings on wood.
1375	Scattergood & Hammar, Philadelphia,	Engravings on wood (machinery).
1376	Breuker & Kessler, Philadelphia,	Commercial lithographic engraving.
1377	Leonhardt, Theodore, & Son, Philadelphia,	Commercial lithographic engraving.
1378	Gay, George, Philadelphia,	Decorated china and glass.
1379	Steele Bros., Philadelphia,	American decorated china and engraved glass.

*(Annex, Gallery No. 20.)*

NO.	EXHIBITOR.	SUBJECT.
1380	Bevington & Co., Philadelphia,	Decorated china.
1381	Bien, Julius, 16 and 18 Park Place, New York,	Lithographic and photo-lithographic illustrations, maps, charts, and scientific engravings and drawings. Publisher of Walker's Statistical Atlas of the United States, and Album of the International Exhibition.
1382	Lauderbach, James W., Philadelphia,	Four frames of engravings on wood, and illustrated books.
1383	Thompson, J. C., Providence,	Two frames of engravings on wood.
1384	Lehman & Bolton, Philadelphia,	Commercial lithographic engraving.
1385	Potsdamer & Co., Philadelphia,	Commercial lithographic engraving.
1386	Haas, Augustus, New York,	Electrotype reproductions of medals and bas reliefs.

*(Annex, Gallery No. 22.)*

NO.	EXHIBITOR.	SUBJECT.
1387	Sartain, John, Philadelphia,	Engravings on steel: The Iron-Worker; Chris Rejected; American Inventors; County Election; Zeisberger preaching to the Indians; two portraits.
1388	Sartain, Samuel, Philadelphia,	Engravings on steel: One of the Chosen; Evangeline; Clear the Track; two frames of portraits.
1389	Hollyer, Samuel, Guttenberg, N. Y.,	Engravings on steel: Flaw in the Title; Charles Dickens; frame of portraits.
1390	Perine, George E., New York,	Engravings on steel: Mother of the Lord; Better Land; Star-Spangled Banner; seventeen frames of portraits and book illustrations. Picture engraving on steel executed in all its branches. Portraits a specialty. Fine work in all styles at reasonable prices.
1391	McRae, J. C., New York,	Engravings on steel: The Day we Celebrate; First in Peace; Raising of the Liberty-Pole.
1392	Burt & Hinshelwood, New York,	*Engraving on steel: The Pet Lamb. Owned by R. E. Moore.
1393	Pease, J. Ives, Canaan, Conn.,	Engraving on steel: Old 76 and Young 48; frame of bank-note vignettes.
1394	Whitechurch, R. (deceased),	*Engraving on steel: Franklin before the Lords in Council. Owned by Thos. Kelly.
1395	Ritchie, A. H., New York,	Engraving on steel: Lady Washington's Reception.



NO.	EXHIBITOR.	SUBJECT.
1396	Kelly, Thomas, New York,	Two English engravings, after American artists: Rock of Ages; Mercy's Dream.
1397	Durand, A. B., New York,	Engravings on steel: Musidora; Ariadne; Declaration of Independence; frame of portraits.
1398	Volkmar, Charles, Baltimore,	Etchings on copper; two frames of landscapes.
1399	Brown, G. L., Boston,	Etchings on copper; frame of landscapes.
1400	Moran, Peter, Philadelphia,	Etchings on copper; five frames of animal subjects.
1401	Ferris, S. J., Philadelphia,	Etchings on glass and copper; two portraits of Fortuny.
1402	Hollyer, Samuel, Guttenberg, N.Y.,	Engraving on steel: Autumn.
1403	Andrews, Joseph (deceased),	Engraving on steel: Landing of the Pilgrims.
1404	Gugler, H., Washington,	*Engraving on steel: portrait of Washington, Owned by G. D. Patten, Jr.
1405	Whitechurch, R. (deceased),	Engraving on steel: Capture of the Serapis.
1406	Lang, George S., Philadelphia,	Engravings on copper: Landing of Columbus; Washington crossing the Delaware.
1407	Marshall, W. E., New York,	Three engravings on steel: one of Washington, two of Lincoln.
1408	Knoedler, M., & Co., New York,	English engravings after American artists: Return of the Mayflower; The Two Farewells; Out All Night; Niagara Falls; Woodland Vows; Too Near the War-Path.
1409	Lewis, Miss Edmonia, Rome,	*Asleep (group in marble); Hiawatha's Marriage; Old Arrow Maker and his Daughter (group in marble); terra-cotta busts of Leagfellow, Sumner, and John Brown.
1410	Rogers, John, New York,	Twenty-nine groups of plaster statuary for house and lawn.

*(Annex, Gallery No. 24.)*

NO.	EXHIBITOR.	SUBJECT.
1411	National Bank Note Company, New York,	Specimens of bank-note engraving.
1412	American Bank Note Company, New York,	Specimens of bank-note engraving.
1413	Continental Bank Note Company, New York,	Specimens of bank-note engraving.
1414	Heath & McKendrick, Philadelphia,	Plaster figures and ornaments, and Scagliola pedestals.
1415	Rulon, S. A., Philadelphia,	*Ancient Hindoo idol.
1416	Faser, C., Philadelphia,	Architectural gilt frame.
1417	Spalding, H. M., Philadelphia,	Household art.
1418	Pope, A., Jr., Boston,	*Painted wood carving—Game.
1419	Fick, Frederick, Philadelphia,	Marble monumental bas-relief.
1420	French, Wm. H., Philadelphia,	Plaster ornaments for interior decoration.
1421	Fisher, Mrs. J. Francis, Florence,	Mosaic table.
1422	Snowdon, T. W.,	Wood carvings of chamois.
1423	Wiesenhahn, F. W. H., St. Louis,	Penmanship and pen drawings.
1424	Giddings, Thomas, Williamsport, Pa.,	Centennial frame carved by hand.

**SCULPTURE***(Memorial Hall, Gallery N.)*

NO.	EXHIBITOR.	SUBJECT.
1 35	Worthington Sons, North Amherst, Ohio,	Sandstone pedestal, from their quarries; presented to Memorial Hall.
1 36	Sheldon & Slason, West Rutland, Vt.,	Marble pedestal, from their quarries; presented to Memorial Hall.

# GREAT BRITAIN.

(*Memorial Hall, Galleries B, D, P, Q, R, S, T, Z.*)

[The initials appended to the names of artists in the following pages signify as follows: P.R.A., President, R.A., Academician, A.R.A., Associate, and A.E., Associate Engraver of the Royal Academy of Arts, England; P.R.S.A., President, R.S.A., Member of the Royal Scottish Academy.

When not otherwise stated, the artist is also the contributor.]

## SCULPTURE.

NO.	ARTIST.	TITLE.
1	Adams-Acton, John, London,	Il Giuocatore de Castelletto. Life-size group of boy and dog, in Carrara marble. Lent by Sam'l Budgett, Esq.
2	Adams-Acton, John, London,	The Star of the Period. Ideal bust in marble.
3	Bailey, Edward Hodges. R.A. (deceased),	Bust of Flaxman. Lent by the Royal Academy, London.
3a	Bell, John, London,	Colossal group of "America," from the original marble at the Albert Memorial, reproduced in terra-cotta by Messrs. H. Doulton & Co.
4	Chantrey, Sir Francis Legatt, R.A. (deceased),	Bust of the late Benjamin West, P.R.A. Lent by the Royal Academy, London.
5	D'Epinay, Prospère, Rome,	The Spartan Boy. Bronze statue.
5a	Doulton, Henry, & Co.,	Terra-cotta reproduction of colossal group "America."
6	Gibson, John, R.A. (deceased),	Venus. Lent by Richard C. Naylor, Esq.
6a	Gower, Lord Ronald Leveson, London,	No. 1. Marie Antoinette, when Dauphiness, hunting at Fontainebleau, 1773. No. 2. Marie Antoinette on her Way to Execution, 16th October, 1793. No. 3. "It is Finished."
7	Joy, A. Bruce, London,	The Fairy Tale. Statuette of child.
8	Joy, A. Bruce, London,	Bust of a girl.
9	Joy, A. Bruce, London,	Bust of Napoleon III.
10	Joy, A. Bruce, London,	Medallions.
11	Wood, Marshall, London,	Marble statues.
12	Doolin, Walter, Dublin,	Two Celtic crosses, carved after the ancient Irish crosses in limestone. Exhibited in the grounds.
13	Morgan, George, London,	Frame of medals. Exhibited in South Kensington collection.
14	Wyon, J. S. & A. B., London,	One frame containing medals and seals.

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Ansdell, Richard, R.A., London,	On the Hills—ptarmigan-shooting.
2	Ansdell, Richard, R.A., London,	The Anxious Mother.
3	Anthony, Mark, Hampstead,	Sunset after a Storm. Lent by Thomas Winter, Esq.
4	Archer, J., R.S.A., London,	Portrait of Mrs. Henry Joachim. Lent by Henry Joachim, Esq.
5	Archer, J., R.S.A., London,	The Three Sisters.
6	Armitage, Edward, R.A., London,	Julian the Apostate presiding at a Conference of Sectarians. Lent by the Corporation of Liverpool.
7	Barry, James, R.A. (deceased),	The Temptation in Paradise. Lent by the Society of Arts, London.

NO.	ARTIST.	TITLE.
8	Boughton, G. H., London,	God-Speed. Lent by A. M. Marsden, Esq.
9	Brett, John, London,	Morning among the Granite Boulders. Lent by Mrs. McEwen.
10	Buckner, R., London,	Portrait of Lady Marianne Alford. Lent by the Earl Brownlow.
11	Calderon, Philip H., R.A., London,	After the Battle. Lent by H. W. F. Bolckow, Esq., M.P.
12	Calderon, Philip H., R.A., London,	Deadmona. "She sang a song of willow." Lent by G. C. Schwabe, Esq.
13	Calderon, Philip H., R.A., London,	The Siesta. Lent by Messrs. Agnew & Sons.
14	Callcott, Sir Augustus Wall, R.A. (deceased),	Morning. A landscape. Lent by the Royal Academy, London.
15	Cameron, Hugh, R.S.A., London,	Age and Infancy. Lent by Jas. Stevenson, Esq.
16	Cauty, H. H., London,	Little Sunshine.
17	Clark, J., London,	The Sick Child. Lent by H. J. Turner, Esq.
18	Clark, J., London,	The Bird's Nest. Lent by Geo. Dibley, Esq.
19	Clint, Alfred, London,	Lake scene—Sunset.
20	Clint, Alfred, London,	Sunset—Hastings.
21	Cole, Vicat, A.R.A., London,	Misty Morning. Lent by J. C. Bruten, Esq.
22	Cole, Vicat, A.R.A., London,	Noon. Lent by E. J. Reed, Esq., C.B., M.P.
23	Constable, John, R.A. (deceased),	The Lock. Lent by the Royal Academy, London.
24	Cooke, Edward William, R.A., Tunbridge Wells,	The Goodwin Lightship. Lent by Thos. Brassey, Esq., M.P.
25	Cooke, Edward William, R.A.,	The Rescue of a Barque on the Goodwin by the Van Kook North Deal Life-boat. Lent by Henry Dewhurst, Esq.
26	Cope, Charles West, R.A., London,	Launcelot Gobbo. Lent by R. Peacock, Esq.
27	Cope, Charles West, R.A., London,	Taming of the Shrew. Lent by J. Fielden, Esq., M.P.
28	Cope, Charles West, R.A., London,	The Marriage of Griselda. Lent by Geo. Moore, Esq.
29	Creswick, Thomas, R.A. (deceased),	Landscape. Lent by the Royal Academy, London.
30	Crofts, E., Düsseldorf,	Ligny. Lent by W. Howe, Esq.
31	Crowe, Eyre, London,	After a Run. Lent by Messrs. Agnew & Sons.
32	Crowe, Eyre, London,	Goldsmith's Mourners. (See J. Forster's "Life of Oliver Goldsmith.")
33	Daniell, William, R.A. (deceased),	View of the Coast of Scotland. Lent by the Royal Academy, London.
34	Dobson, William C. T., R.A., London,	Children's Children are the Crown of Old Men. Lent by J. Carolus Stirling, Esq.
35	Dobson, William C. T., R.A., London,	Nazareth. Lent by Wm. Bowman, Esq., F.R.S.
36	Dobson, William C. T., R.A., London,	The Widow's Son raised to Life.
37	Donaldson, Andrew B., London,	The Eve of the Battle—Jeanne d'Arc encouraging the Troops.
38	Elmore, Alfred, R.A., London,	Two Women shall be Grinding at the Mill. Lent by John Bowring, Esq.
39	Elmore, Alfred, R.A., London,	On the Housetops.
40	Elmore, Alfred, R.A., London,	Lenore.
41	Etty, William, R.A. (deceased),	Sleeping Nymph and Satyrs. Lent by the Royal Academy, London.
42	Faer, Thomas, R.A. Chigwell,	God's Acre. Lent by George Fox, Esq.
43	Faer, Thomas, R.A., Chigwell,	Baith Faither and Mither. Lent by H. W. F. Bolckow, Esq., M.P.
44	Field, W., London,	The Milkmaid's Song to Izaak Walton. Lent by W. S. Cookson, Esq.
45	Fildes, S. Luke, London,	Applicants for Admission to a Casual Ward. Lent by Thomas Taylor, Esq.
46	Fildes, S. Luke, London,	Betty. Lent by Isaac M. Marsden, Esq.
47	Frith, Wm. Powell, R.A., London,	The Marriage of H.R.H. the Prince of Wales in St. George's Chapel, Windsor, March 10, 1863. Lent by Her Majesty the Queen.
48	Frith, Wm. Powell, R.A., London,	The Railway Station. Lent by Messrs. Graves & Co.
49	Frith, Wm. Powell, R.A., London,	Pamela. Lent by H. W. F. Bolckow, Esq., M.P.
50	Fusell, Henry, R.A. (deceased),	Thor Battering the Serpent of Misgarn. Lent by the Royal Academy, London.

NO.	ARTIST.	TITLE.
51	Gainsborough, Thomas, R.A. (deceased),	Portrait of the Duchess of Richmond. Lent by Baron Lionel de Rothschild.
52	Gilbert, Sir John, A.R.A., Blackheath,	The First Prince of Wales. Lent by Edwin Lawrence, Esq.
53	Gilbert, Sir John, A.R.A., Blackheath,	The Battle of Naseby. Lent by Messrs. Agnew & Sons.
54	Gill, E., Sutton Hill,	Rhaiad Dŷ, Dol-y-Melynen, North Wales. Lent by Lewis Loyd, Esq.
55	Girardot, E. G., London,	Herr Carl Deichmann, violinist and composer.
56	Goodall, Frederick, R.A., Harrow Weald,	Cairo Fruit-Girl. Lent by Messrs. Pilgeram & Lefèvre.
57	Graham, Peter, London,	On the Way to the Cattle Tryst. Lent by Thomas Jessop, Esq., J.P.
58	Graham, Peter, London,	Wind. Lent by A. Brogden, Esq., M.P.
59	Grant, Sir Francis, P.R.A., London,	The late Viscount Hardinge, Governor-General of India, returning from the Battle of Ferozeshah. The background represents the captured camp and village of Ferozeshah. Lent by Viscount Hardinge.
60	Grant, Sir Francis, P.R.A., London,	Portrait of Mrs. Markham.
61	Grant, Sir Francis, P.R.A., London,	Portrait of Earl Russell, K.G. Lent by Earl Russell, K.G.
62	Hardy, Heywood, London,	The Disputed Toll. Lent by Messrs. Agnew & Sons.
63	Hayter, Sir George,	Portrait of Her Majesty in Coronation Robes. Lent by Her Majesty the Queen.
64	Herdman, R., R.S.A., Edinburgh,	Portrait of Thomas Carlyle (replica).
65	Hering, G. E., London,	A Rift in the Gloom, Glen Sannox. Lent by John Pender, Esq., M.P.
66	Hicks, G. E., London,	Will he do it?
67	Hilton, William, R.A. (deceased),	The Rape of Ganymede. Lent by the Royal Academy, London.
68	Hodgson, J. E., A.R.A., London,	A Needy Knife-Grinder. Lent by H. J. Turner, Esq.
69	Hodgson, J. E., A.R.A., London,	Returning the Salute. Lent by Thomas Taylor, Esq.
70	Holl, F., London,	"The Lord gave, the Lord hath taken away; blessed be the name of the Lord." Lent by F. C. Pawle, Esq.
71	Holl, F., London,	Village Funeral. "I am the Resurrection and the Life." Lent by John Akroyd, Esq.
72	Hook, James Clarke, R.A., Farnham,	From under the Sea. Lent by C. P. Matthews, Esq.
73	Horsley, John Callicott, R.A., London,	Lost and Found. Lent by J. Penn, Esq.
74	Horsley, John Callicott, R.A., London,	Stolen Glances. Lent by Messrs. Agnew & Sons.
75	Horsley, John Callicott, R.A., London,	Checkmate next Move. Lent by Thomas Jessop, Esq., J.P.
76	Hughes, Arthur, London,	The Convent Boat. Lent by George Trist, Esq.
77	Hunt, Holman, London,	Portrait of the artist.
78	Hunter, Colin, London,	Trawlers waiting for the Darkness. Lent by Alex. S. Stevenson, Esq.
79	Johnson, C. E., London,	The Last of the Spanish Armada.
80	Johnston, A., London,	The Marriage of the Covenanters. Lent by Jas. Virtue, Esq.
81	Jones, T. A., P.R.H.A., Dublin,	Limerick Lasses. Lent by John Lewis, Esq.
82	Jopling, Mrs. Louise, London,	The Five Sisters of York.
83	King, Haynes, London,	First Steps. Lent by Edward G. Barr, Esq.
84	Knight, C. P., Clifton, Bristol,	Newport Bay, Pembrokeshire.
85	Lance, George (deceased),	The Unwelcome Guest. Lent by G. E. Lance, Esq.
86	Landseer, Sir Edwin, R.A. (deceased),	The Traveled Monkey. Lent by Lord Northbrook.
87	Landseer, Sir Edwin, R.A. (deceased),	The Sick Monkey. Lent by Lord Northbrook.
88	Landseer, Sir Edwin, R.A. (deceased),	Portrait of Lord Ashburton. Lent by Lady Louisa Ashburton.
89	Landseer, Sir Edwin, R.A. (deceased),	Study of a Lion. Lent by Theo. H. Hills, Esq.

NO.	ARTIST.	TITLE.
90	Landseer, Sir Edwin, R.A. (deceased),	Study of a Lion. Lent by Thos. H. Hills, Esq.
91	Laurence, S., London,	Portrait of Robert Browning, the poet.
92	Lawrence, Sir Thomas, P.R.A. (deceased),	Portrait of the first Lord Ashburton. Lent by Lady Louisa Ashburton.
93	Lawrence, Sir Thomas, P.R.A. (deceased),	The Three First Partners of the Baring House, viz., Sir Francis Baring, first Baronet, his brother, John Baring, and his son-in-law, Charles Wall. Lent by Lord Northbrook.
94	Lehmann, Rudolph, London,	"La Rota" at the Foundling Hospital, Rome. Lent by Lewin Mozley, Esq.
95	Lehmann, Rudolph, London,	Portrait of Mrs. Henry Schlesinger. Lent by Henry Schlesinger, Esq.
96	Leighton, Frederick, R.A., London,	Summer Moon. Lent by Alfred Morrison, Esq.
97	Leighton, Frederick, R.A., London,	Interior of a Jew's House, Damascus. Lent by Bingham Mildmay, Esq.
98	Leighton, Frederick, R.A., London,	Eastern Slinger Scaring Birds in the Harvest Time—Moonrise.
99	Leslie, C. R., R.A. (deceased),	May Day in the Time of Queen Elizabeth. Lent by J. Naylor, Esq.
100	Lealie, George D., A.R.A., London,	Celia's Arbor. Lent by G. C. Schwabe, Esq.
101	Lewis, C. J., London,	Sunday Morning.
102	Lewis, C. J., London,	A Berkshire Barley-Field.
103	Lewis, John Frederick, R.A., Walton-on-Thames,	The Prayer of Faith healeth the Sick. Lent by J. Wardell, Esq.
104	Lutyens, C., London,	Portrait of F. Bame, Esq. Lent by F. Bame, Esq.
105	MacCallum, A., London,	Sultry Eve.
106	Maclaren, W., Capri, near Naples,	A Game of Knucklebones.
107	Maclise, Daniel, R.A. (deceased),	The Banquet Scene from Macbeth. Lent by F. W. Cosens, Esq.
108	Maclise, Daniel, R.A. (deceased),	The Wood Ranger. Lent by the Royal Academy, London.
109	MacWhirter, J., London,	Out in the Cold. Lent by Captain Hill.
110	MacWhirter, J., London,	Land of the Mountain and of the Flood. Lent by Kaye Knowles, Esq.
111	MacWhirter, J., London,	Valley of Slaughter. Lent by George Fox, Esq.
112	Marks, Henry Stacy, A.R.A., London,	The Ornithologist. Lent by George Fox, Esq.
113	Marks, Henry Stacy, A.R.A., London,	The Three Jelly Post-Boys. Lent by Messrs. Agnew & Sons.
114	Mason, George, A.R.A. (deceased),	Wind on the Wolds. Lent by Fred'k Leighton, Esq., R.A.
115	Millais, John Everett, R.A., London,	Early Days. Lent by C. P. Matthews, Esq.
116	Moore, Henry, London,	A Winter Gale in the Channel. Lent by H. Smith Wright, Esq.
117	Moore, Henry, London,	Storm coming on at Sunset—Coast of North Wales. Lent by E. Bollans, Esq.
118	Mulready, William, R.A. (deceased),	The Village Buffoon. Lent by the Royal Academy, London.
119	Mutrie, Miss A. F., London,	White Cactus.
120	Mutrie, Miss M. D., London,	Cottage Window.
121	Newton, Gilbert Stewart, R.A. (deceased),	Abelard. Lent by the Royal Academy, London.
122	Northcote, J., R.A. (deceased),	The Marriage of the Young Prince Richard, Duke of York, second son of King Edward the Fourth, with Anne, daughter of the Duke of Norfolk, May 15th, 1478. Lent by Her Majesty the Queen.
123	O'Neil, Henry, A.R.A., London,	A Volunteer.
124	Opie, John, R.A. (deceased),	Portrait of Hamah More. Lent by the Duke of Manchester.
125	Orchardson, W. Q., A.R.A., London,	Prince Henry, Poins, and Falstaff. Lent by C. Moxon, Esq.
126	Orchardson, W. Q., A.R.A., London,	Moonlight on the Lagoons, Venice. Lent by H. J. Turner, Esq.

NO.	ARTIST.	TITLE.
127	Oules, W. W., London,	Portrait of John Rous, Esq. Lent by Bart. Rous, Esq.
128	Oules, W. W., London,	Portrait of Philip M. Westlake, Esq.
129	Owen, William, R.A. (deceased),	Boy and Kitten. Lent by the Royal Academy, London.
130	Paton, W. H., R.S.A., Edinburgh,	A Dell without a Name. Lent by Alex. S. Seevenson, Esq.
131	Pease, J. T., London,	Children and Goldfish.
132	Perugini, Charles Edward, London,	Portrait of Mrs. C. E. Perugini, younger daughter of the late Charles Dickens, Esq.
133	Pettie, John, R.A., London,	Touchstone and Audrey. Lent by C. Moxon, Esq.
134	Pettie, John, R.A., London,	Smuggler and Exciseman—Tussle for the Keg. Lent by W. P. Frith, Esq., R.A.
135	Pettie, John, R.A., London,	Portrait of G. H. Boughton, Esq. Lent by G. H. Boughton, Esq.
136	Pettie, John, R.A., London,	Sanctuary. Lent by George Fox, Esq.
137	Poole, P. F., R.A., London,	The Lion in the Path. Lent by Messrs. Agnew & Sons.
138	Pott, L. G., London,	Charles I. leaving Westminster Hall after his Trial. Lent by H. T. Elwes, Esq.
139	Poynter, Edward J., A.R.A., London,	The Ibis Girl. Lent by J. Wardell, Esq.
140	Poynter, Edward J., A.R.A., London,	The Golden Age. Lent by the Earl of Wharcliffe.
141	Poynter, Edward J., A.R.A., London,	The Festival. Lent by the Earl of Wharcliffe.
142	Prinsep, Val. C., London,	A Minuet. Lent by George Paine, Esq.
143	Prinsep, Val. C., London,	The Death of Cleopatra.
144	Raeburn, Sir Henry, R.A. (deceased),	Portrait of Alexander, Fourth Duke of Gordon. Lent by the Duke of Manchester.
145	Raven, John S., London,	The Quarries of Holmground, Lancashire.
146	Redgrave, Richard, R.A., London,	The Woodreeve's Orders.
147	Redgrave, Richard, R.A., London,	The Alarm of an Invasion.
148	Reynolds, Sir Joshua, P.R.A. (deceased),	Portrait of the artist. Lent by the Royal Academy, London.
149	Richmond, W. B., London,	Prometheus Bound.
150	Rigaud, John Francis, R.A. (deceased),	Samson and Delilah. Lent by the Royal Academy, London.
151	Rivière, B., London,	Circe and the Companions of Ulysses. Lent by J. K. Cross, Esq., M.P.
152	Rivière, B., London,	War Time. Lent by E. W. Buxton, Esq.
153	Roberts, T., London,	The Night before Bosworth. Lent by W. J. At, Esq.
154	Sant, James, R.A., London,	"Sometimes with most intensity gazing, I seem to see thought folded over thought." Lent by Mrs. Lancaster.
155	Sant, James, R.A., London,	Young Whittington. Lent by Samuel Lord, Esq.
156	Smart, J., A.R.S.A., Edinburgh,	The Gloom of Glen Ogle.
157	Stanfield, Clarkson, R.A. (deceased),	On the Scheldt near Lierkenshoek. Lent by the Royal Academy, London.
158	Staples, Mrs. M. E., Sible Hed- ingham,	In Memoriam. Lent by W. F. Shawcross, Esq.
159	Starr, Miss Louisa,	Imogen. Lent by H. C. Howells, Esq., of New York.
160	Stone, Marcus, London,	My Lady is a Widow and Childless. Lent by Jos Virtue, Esq.
161	Storey, George A., London,	Mistress Dorothy. Lent by G. C. Schwabe, Esq.
162	Storey, George A., London,	Only a Rabbit. Lent by Messrs. Agnew & Sons.
163	Stuart, Gilbert (deceased),	Portrait of Washington. Lent by J. Delaware Lewis, Esq.
164	Tadema, L. Alma, A.R.A., London,	Convalescence. Lent by W. H. Smith, Esq., M.P.
165	Tadema, L. Alma, A.R.A., London,	The Vintage Festival. Lent by Ernest Gambart, Esq.
166	Tadema, L. Alma, A.R.A., London,	The Mummy—Roman period. Lent by Messrs. Pilgeram & Lefèvre.

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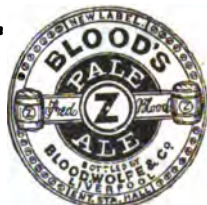
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Only First Class Medal, Paris, 1855.

Prize Medal ..... London, 1862.

Gold Medal ..... Paris, 1867.

**ONLY DIPLOMA OF HONOUR, VIENNA, 1873.**



NO.	ARTIST.	TITLE.
167	Topham, F. W. W., London,	The Fall of Rienzi, the last Roman Tribune. Lent by the Corporation of Liverpool.
168	Turner, J. M. W., R.A. (deceased),	Dolbadden Castle, North Wales. Lent by the Royal Academy, London.
169	Wallis, H., London,	Across the Common. Lent by Charles G. Clement, Esq.
170	Wallis, H., London,	The Stone-Breaker. Lent by Temple Soanes, Esq.
171	Walton, F., Dorking,	Crossways Farm, near Dorking. "One of the olden time."
172	Ward, Edward M., R.A., London,	Chesterfield's Anteroom. Lent by George Fox, Esq.
173	Ward, Edward M., R.A., London,	Lady Teazle's Spinster Days.
174	Ward, Mrs. Henrietta, London,	The Poet's First Love. Lent by A. Brogden, Esq., M.P.
175	Ward, Mrs. Henrietta, London,	A Scene from the Childhood of the Old Pretender.
176	Ward, James, R.A. (deceased),	An Arab Horse. Lent by Charles J. Freake, Esq.
177	Watts, George F., R.A., London,	Portrait of John Everett Millais, R.A. Lent by J. E. Millais, Esq., R.A.
178	Watts, George F., R.A., London,	Portrait of Frederick Leighton, R.A. Lent by F. Leighton, Esq., R.A.
179	Weigall, Henry, London,	Portrait of the late Duke of Wellington, K.G. Lent by the Dowager Countess of Westmoreland.
180	Weigall, Henry, London,	Portrait of Alexandra, Princess of Wales.
181	Wells, Henry Tanworth, R.A., London,	Portrait of the Right Hon. W. E. Forster, M.P. Lent by the Right Hon. W. E. Forster, M.P.
182	Wells, Henry T. R.A., London,	Volunteers at a Firing Point, with portraits of Colonel The Hon. W. J. Colville, Lieut.-Colonel Lord Elcho, Lieut.-Colonel Sir Henry Halford, Bart., Major Drake, Royal Engineers, Captain Horatio Ross, Captain Heaton, Stewart Pixley, Esq., Martin R. Smith, Esq., and Edward C. Ross, Esq.
183	Wells, Henry T., R.A., London,	Alice.
184	West, Benjamin, P.R.A. (deceased),	The Death of General Wolfe. Lent by Her Majesty the Queen.
185	West, Benjamin, P.R.A. (deceased),	Christ Blessing Little Children. Lent by the Royal Academy, London.
186	Wilkie, Sir David, R.A. (deceased),	Reading the Gazette. Lent by Joseph Fenton, Esq.
187	Wilkie, Sir David, R.A. (deceased),	Boys Digging for a Rat. Lent by the Royal Academy, London.
188	Wilson, Richard, R.A. (deceased),	Portrait of the artist. Lent by the Royal Academy, London.
189	Wynfield, D. W., London,	Fresh Flowers. Lent by George Dibley, Esq.
190	Wynfield, D. W., London,	The Death of Buckingham.
191	Yeames, William F., A.R.A., London,	The Appeal to the Podestà. Lent by Messrs. Agnew & Sons.
192	Yeames, William F., A.R.A., London,	Flowers for Hall and Bower. Lent by Messrs. Agnew & Sons.
193	Zoffany, Johann, R.A. (deceased),	The Meeting of the Members of the Royal Academy, London. Lent by the Royal Academy, London.

## WATER COLOR PAINTINGS.

NO.	ARTIST.	TITLE.
1	Abraham, J., London,	The Beacon. Lent by C. R. Cheffins, Esq.
2	Beavis, R., London,	Returning Home from the Autumn Fairs—Early Snow. Lent by David Duncan, Esq.
3	Brierly, O. W., London,	Blake going on board the "Resolution" off Dover to take command of the Fleet fitted out against the Dutch, June, 1652. Lent by Messrs. Vokins.
4	Callow, W., London,	The Grand Canal, Venice, looking toward Santa Salute.
5	Callow, W., London,	Menagio on the Lake of Como.
6	Cattermole, George (deceased),	The Death of Duncan. Lent by George Giles, Esq.
7	Cox, David, Jr., London,	Donne Castle. Lent by F. A. Argles, Esq.
8	Cox, David, Jr., London,	Mountain Solitude. Lent by Captain Baldwin.

NO.	ARTIST.	TITLE.
9	Donaldson, A. B., London,	Ludlow Churchyard.
10	Fahey, E. H., London,	A Cloudy Day on the Moultsford Downs.
11	Fripp, A. D., London,	Young England. Lent by P. G. Hewett, Esq., F.R.S.
12	Fripp, A. D., London,	Starring in the Provinces. Lent by W. S. Cookson, Esq.
13	Fripp, A. D., London,	The Coming Storm. Lent by H. Drake, Esq.
14	Gilbert, Sir John, A.R.A., Blackheath Road,	Visit of King Francis the First of France, the Queen of Navarre, Madam d'Estampes, and the Cardinal of Lorraine to the Workshop of Benvenuto Cellini.
15	Gillies, Mrs. M., London,	Prospero and Miranda. Lent by James Horsfall, Esq.
16	Goodall, E. A., London,	The Rialto. Lent by F. A. Argles, Esq.
17	Goodall, E. A., London,	The Ancient Causeway near the Pyramids of Sak-hara.
18	Goodall, Walter, London,	The Lottery Ticket. Lent by Jones Gibb, Esq.
19	Haghe, Louis, London,	The Tepidarium of the Baths (Pompeii). Lent by T. Woodgate, Esq.
20	Haghe, Louis, London,	His Holiness Pope Pius IX. administering the communion to the gentlemen of his household, and to persons of distinction, in the Sistine Chapel, in the Vatican. Lent by R. M. Knowles, Esq.
21	Haghe, Louis, London,	The Night Watch.
22	Hargitt, E., London,	A Highland Glen. Lent by R. Newbold, Esq.
23	Jenkins, J. J., F.S.A., London,	En Route. Lent by H. A. Hunt, Esq., C.B.
24	Johnson, E. K., Sible Hedingham,	A Study. Lent by J. Galsworthy, Esq.
25	Johnson, H., London,	The Carrara Mountains from Lerici, Gulf of Spezia. Lent by E. Cohen, Esq.
26	Jopling, J. M., London,	Flossy. Lent by the Right Hon. Cowper Temple, M.P.
27	Jopling, J. M., London,	Winter. Lent by H. S. Bicknell, Esq.
28	Jopling, J. M., London,	In the Conservatory.
29	Knight, J., London,	A Morass. Lent by Henry Crowley, Esq.
30	Linton, J. D.,	Washing the Beggars' Feet on Maundy-Thurs-day. Lent by A. Dunbar, Esq.
31	May, W., London,	Homeward Bound. Lent by E. J. Reed, Esq., C.B., M.P.
32	Mole, J. H., London,	Somebody Coming. Lent by Latimer Clark, Esq.
33	Montalba, Miss Clara, London,	Blessing a Tomb, Westminster.
34	Naftel, P. J., London,	Isle of Skye.
35	Newton, A. P., London,	Mountain Gloom, Glencoe. Lent by F. W. Stragell, Esq.
36	Newton, A. P., London,	Left by the Tide.
37	O'Connor, J., London,	St. Paul's, Thanksgiving-day. (In distemper.) Lent by Lord R. L. Gower.
38	Severn, A., London,	Waves by Moonlight. Lent by the Duchess of Westminster.
39	Severn, A., London,	Old Chelsea before the Thames Embankment. Lent by Alfred Tylor, Esq., F.G.S.
40	Smallfield, F., London,	Italian Nurse and Child.
41	Smallfield, F., London,	Genoese Flower-Girl.
42	Stillman, Mrs. M., London,	Sir Tristram and Queen Yseult.
43	Tadema, L. Alma, A.R.A., London,	The Picture. Lent by Ernest Gambart, Esq.
44	Tadema, L. Alma, A.R.A., London,	The Three Friends. Lent by Messrs. Pilgeram & Lefèvre.
45	Tadema, L. Alma, A.R.A., London,	History of an Honest Wife. Lent by Messrs. Pilgeram & Lefèvre.
46	Tayler, F., London,	Cattle ferry-boat landing at Kylarkin from the Isle of Skye, Scotland. Lent by W. Gibley, Esq.
47	Tayler, F., London,	Keeper's Daughter. Lent by W. Gibley, Esq.
48	Tayler, F., London,	A Meet in the Forest. Lent by W. Gibley, Esq.
49	Thomas, W. L., London,	The Girls' School.
50	Thorburn, A., A.R.A., London,	Duchess of Manchester. Lent by the Duke of Manchester.
51	Thorburn, A., A.R.A., London,	Lady Constance Grosvenor. Lent by the Duke of Westminster.

NO.	ARTIST.	TITLE.
52	Topham, F. W., London,	Listening to her Lover's Letter. Lent by R. M. Knowles, Esq.
53	Willis, H. B., London,	A Group of Highland Cattle in Glen Nevis, Western Highlands, Scotland. Lent by H. R. H. the Princess Louise (Marchioness of Lorne).
54	Willis, H. B., London,	A Group of Cattle on the Banks of the Hamble, in Hampshire. Lent by Mrs. George Moore.

## DRAWINGS WITH PEN, PENCIL, OR CRAYONS.

ARTIST.	TITLE.
Leach, John (deceased),	Outlines in pencil. Lent by Miss C. E. Leach, London.

## ENGRAVINGS.

NO.	ARTIST.	TITLE.
1	Barlow, T. O., A.R.A., London,	Prayer (after J. Phillip, R.A.).
2	Barlow, T. O., A.R.A., London,	Faith (after J. Phillip, R.A.).
3	Barlow, T. O., A.R.A., London,	Dolores (after J. Phillip, R.A.).
4	Barlow, T. O., A.R.A., London,	Sir James Paget, Bart. (after J. E. Millais, R.A.).
5	Brandard, E. P., Barnabury,	Venice (after J. M. W. Turner, R.A.).
6	Brandard, E. P., Barnabury,	Men-of-War off Plymouth—Rough Weather (after H. Dawson).
7	Cope, C. W., R.A., London,	"The Life School of the Royal Academy."
8	Edwards, Edwin, London,	Proofs of a work on "Old Inns":—Title-page, "Crown and Castle, Oxford;" back, "Scole Inn."
9	Edwards, Edwin, London,	Proofs of a work on "Old Inns."
10	Edwards, Edwin, London,	Martlesham Lion Inn and Sign.
11	Edwards, Edwin, London,	Scole Inn. The Sun, Feering.
12	Edwards, Edwin, London,	Half Moon, Bury. Rose and Crown, Sudbury.
13	Etching Club,	Etchings by members. Lent by Samuel Redgrave, Esq.
14	Evershed, Arthur, London,	Dry Points.
15	Evershed, Arthur, London,	Etchings.
16	Haden, F. S., London,	Calais Pier (after J. M. W. Turner, R.A.).
17	Haden, F. S., London,	Breaking up of the Agamemnon.
18	Heseltine, J. P., London,	Branscombe, Devon. Gainsborough Lane, Ipswich.
19	Jeans, C. H., London,	Parents of Christ seeking Him (after E. Armitage, R.A.).
20	Leighton, J., F.S.A., London,	Proofs of wood engravings, various (after drawings by artist).
21	Leighton, J., F.S.A., London,	Etchings printed from relief.
22	Lewis, Charles G., London,	The Horse Fair (after Rosa Bonheur).
23	Lewis, Charles G., London,	Highland Cattle—Early Morn (after Rosa Bonheur).
24	Lewis, Charles G., London,	Bouricaïros crossing the Pyrenees (after Rosa Bonheur).
25	Lewis, Charles G., London,	Daniel in the Lions' Den (after B. Rivière).
26	Parke, R. B., Hornsey,	Mrs. Abington as Miss Prue (after Sir J. Reynolds, P.R.A.).
27	Phillips, L. B., London,	The Rathhaus, Cologne.
28	Phillips, L. B., London,	The Canonsgate Tolbooth, Edinburgh.
29	Phillips, L. B., London,	John Knox's House, Edinburgh.
29a	Quick, W. M. R., London,	Specimens of engravings on wood.
30	Redgrave, Richard, R.A., London,	Help at Hand.
31	Redgrave, Richard, R.A., London,	Rustic Courtship.
32	Ridgway, W., London,	The Light of the World (after Holman Hunt).
33	Ridgway, W., London,	Pirates of the Mediterranean (after F. R. Pickersgill, R.A.).
34	Ridgway, W., London,	A Triumphant Procession (after T. Gérard).

NO.	ARTIST.	TITLE.
35	Saddler, J., London,	St. Michael's Mount, Cornwall (after Birket Foster).
36	Saddler, J., London,	Homeless (after G. Doré).
37	Saddler, J., London,	Going to the Christening (after A. Bellows).
38	Saunders, G., London,	Choosing the Wedding Gown (after W. Mulready, R.A.).
39	Saunders, G., London,	The Valley Farm (after J. Constable, R.A.).
40	Sharpe, C. W., Maidenhead,	Play scene in Hamlet (after D. Maclise, R.A.).
41	Sharpe, C. W., Maidenhead,	Here Nelson fell (after D. Maclise).
42	Slocombe, C. P., Islington,	King Arthur's Castle, Tintagel, Cornwall.
43	Slocombe, C. P., Islington,	Stonehenge.
44	Slocombe, C. P., Islington,	Beach at Rottingdean, Sussex—chalk cliffs and boulders.
45	Stacpoole, F., London,	Circe and the Friends of Ulysses (after B. Rivière).
46	Stacpoole, F., London,	Ought and Carry One (after Miss A. Havers).
47	Swain, Joseph, London,	Pictures from "Punch."
48	Swain, Joseph, London,	Specimens of book and magazine illustrations.
49	Tayler, Frederick, London,	Illustrations to the "Deserted Village" of Oliver Goldsmith.
50	Tayler, Frederick, London,	The "L'Allegro" of Milton.
51	Tayler, Frederick, London,	The "Songs of Shakespeare."
52	Thomas, Percy, London,	Good-Night.
53	Thomas, Percy, London,	Miss Isabel Bateman.
54	Thomas, Percy, London,	Henry Irving, Esq.
55	Tomkins, Charles A., London,	Jochebed, mother of Moses (after Fred'k Goodall, R.A.).
56	Tomkins, Charles A., London,	Lady Gertrude Fitzpatrick (after Sir J. Reynolds, P.R.A.).
57	Tomkins, Charles A., London,	The Right Rev. J. W. Colenso, D.D., Bishop of Natal (after S. Sidley).
58	Uhlrich, H. S., Chislehurst,	Three sets of wood engravings, portraits.
59	Ward, George R., London,	Earl of Harewood and Hounds (after Sir F. Guss, P.R.A.).
60	Ward, George R., London,	Mehemet Ali, Pasha of Egypt (after T. Brigstocke).
61	Willmore, A., London,	Dutch Boats landing Fish off Egmont (after E. W. Cooke, R.A.).
62	Willmore, A., London,	A Calm Morning on the Thames (after D. Cox).
63	Willmore, A., London,	Windsor Castle (after Birket Foster).

## CANADA.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the office of the Canadian Commission, Main Building.]

(Annex, Gallery No. 26.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1	Cresswell, W. N.,	Sheep.	Dr. John Salter.
2	Kane, Paul,	Chief of Prairie Tribes.	Hon. G. W. Allen.
3	Vogt, Adolph,	Habitans.	H. McMahon, Esq.
4	Day, F.,	Landscape.	
5	Verner, F. A.,	Winneshiek.	
6	Cresswell, W. N.,	In the Eastern Townships.	Dr. John Salter.
7	Perré, H.,	*Autumn.	
8	Verner, F. A.,	*Hudson Bay Officials leaving Brûlé Portage, on Rainy Lake (early morning).	
9	Kreighoff,	Winter in Lower Canada.	Mrs. Frothingham.
10	Cresswell, W. N.,	Pastoral.	Dr. John Salter.
11	Verner, F. A.,	*Wa-pa-sto-ka.	
12	Jacobi,	Morning Mist on the Ottawa.	A. Gilmore, Esq.
13	Forbes, J. C.,	Foundering of the Hibernia in Mid-Ocean.	
14	Verner, F. A.,	*Storm on Lake Ontario.	
15	Forbes, J. C.,	Beware.	
16	Hancock, H.,	*At Dundas, Ontario.	
17	Jacobi,	Mountains on the Ottawa.	A. Gilmore, Esq.
18	Day, F.,	Landscape.	
19	Martin, T. M.,	A Whisky Ring.	
20	Day, F.,	Landscape.	
21	Perré, H.,	*Summer.	
22	Verner, F. A.,	*Indian Summer, Parry Sound.	
23	Day, F.,	Landscape.	
24	Sandham, H.,	On the river Godbout.	A. Gilmore, Esq.
25	Day, F.,	Landscape.	
26	Day, F.,	Landscape.	
27	Edson, A.,	The Owl's Head, Eastern Township.	H. McMahon, Esq.
28	Verner, F. A.,	*Ne-bah-quah-ous.	
29	Cresswell, W. N.,	Coast Sketch.	Major Walker.
30	Baigent, R.,	*Dead Canary.	
31	Millard, C. S.,	Scene in Wales.	J. M. T. Burnside.
32	Matthews, M.,	Lane in Oxfordshire.	
33	Martin, T. M.,	Still Life.	Warren Rock, Esq.
34	Millard, C. S.,	Rest.	Dr. Hall.
35	O'Brien,	Lords of the Forest.	Government of Ontario.
36	O'Brien,	Crossing the Ice.	E. Carter, Esq.
37	Fowler, D.,	Lilacs.	C. S. Gzowski, Esq.
38	Millard, C. S.,	Indian Tents.	Major John Walker.
39	O'Brien,	Pelee Islands.	Dr. J. Hall.
40	White, G. H.,	Stapel-y-Mall.	J. K. Kerr.
41	Millard, C. S.,	Snowdon.	A. Leask.
42	Fowler, D.,	Lilacs.	Government of Ontario.
43	Cresswell, W. N.,	Lake Superior.	Major Walker.
44	Cresswell, W. N.,	Sheep.	Major Walker.
45	Jacobi,	Landscape.	L. R. O'Brien, Esq.
46	O'Brien,	Ottawa.	

NO.	ARTIST.	TITLE.	OWNER.
47	Sandham, H.,	Point des Monts.	H. Langley, Esq.
48	Hoch, I.,	Old Well in the Woods.	Government of Ontario.
49	Cresswell, W. N.,	Thunder Cape, Lake Superior.	Major Walker.
50	Jacobi,	Landscape.	J. M. T. Burnside, Esq.
51	Fowler, D.,	Partridges.	I. T. Rolph, Esq.
52	Way,	Old Saw-mill.	
53	Edson,	A Trout Brook.	A. I. Pell, Esq.
54	Way,	On the Androscoggin.	T. Kershaw, Esq.
55	Millard, C. S.,	On the Mad River.	A. Chapman, Esq.
56	Fowler, D.,	Castle of Ischia.	J. M. T. Burnside, Esq.
57	Way,	Pumpkin Harvest.	D. A. Crane, Esq.
58	Way,	Morning after the Fishing.	F. Kershaw, Esq.
59	Jacobi,	Sunset.	C. A. Drummond, Esq.
60	Matthews, M.,	A Woodland Stream.	J. C. Forbes.
61	Fowler, D.,	Kirkstall Abbey.	J. M. T. Burnside, Esq.
62	Fowler, D.,	Pigeons.	Dr. C. Leggo.
63	Edson,	Trespassers.	A. I. Pen, Esq.
64	Edson,	Reapers.	T. A. Crane, Esq.
65	Matthews, M.,	Twilight.	C. S. Gzowski, Esq.
66	O'Brien,	Indian Summer.	E. Carter, Esq.
67	Millard,	The Snowdon Ridge.	L. R. O'Brien, Esq.
68	Millard,	Dolwyddelan Castle, Wales.	W. H. Howland, Esq.
69	Fowler, D.,	Flowers.	H. Hancock, Esq.
70	Millard,	North Wales.	J. A. Fraser, Esq.
71	Cresswell,	Lime-Kilns.	Major Walker.
72	Jacobi,	Sketch.	J. M. T. Burnside, Esq.
73	Martin, T. M.,	Beech.	G. Hague, Esq. [transl.]
74	Fowler, D.,	Hollyhocks.	Art Association, Mon-
75	Jacobi,	Sunset.	C. A. Drummond, Esq.
76	Fowler,	Grebes.	H. McMahon, Esq.
77	Weston, I.,	Snowbird and Pigeon.	W. F. Kay, Esq.
78	Fowler, D.,	Syringa.	J. A. Fraser, Esq.
79	Matthews, M.,	At Fairfield, Oxfordshire, England.	Hon. W. Cayley.
80	Millard,	Wild Wales.	J. A. Fraser, Esq.
81	O'Brien,	*Through the Tower Archway, Parli- ment House, Ottawa.	
82	Martin,	Doorway at Westminster Abbey.	James Smith, Esq.
83	Millard,	Welsh Mountain Scene.	R. W. Laird, Esq.
84	Weston, I.,	Making War on the Forest.	
85	Weston, I.,	Study in the Woods.	Major Walker.
86	Jacobi,	Outlet of Gull Lake.	W. F. Kay, Esq.
87	Sandham,	The Lovers' Walk.	T. A. Crane, Esq.
88a	Vandyck,	Portrait of Prince Rupert, painted for George Abbot, Archbishop of Can- terbury in the sixteenth century.	G. A. Gray, Esq.
88b	Vandyck,	Portrait of Owen Abbott, who was de- puted by the English House of Com- mons to bring King George I. to the throne.	G. A. Gray, Esq.
89	Kane, Paul,	Indian Chief.	Hon. G. W. Allen.
90	Sandham, H.,	Mic-Mac Encampment on the Lower St. Lawrence.	D. Butler, Esq.
91	Day, F.,	Winter.	
92	Berthon, G. T.,	The Early Visitor.	Government of Ontario.
93	Jacobi,	The Montmorenci River.	G. A. Drummond, Esq.
94	Raphael, Wm.,	Habitans attacked by Wolves.	G. Scott, Esq.
95	Way, C. I.,	On the Androscoggin.	T. Kershaw, Esq.
96	Jacobi,	Sha-wan-e-gan Falls.	Art Association, Mon-
97	Day, F.,	On Gold River, Nova Scotia.	[transl.]
98	Weston, I.,	*Fruit.	W. Scott, Esq.
99	Bertrand, E.,	*Street Scene in Algiers.	Dr. Robillard.
100	Edson,	Burnham Beeches.	Mrs. Frothingham.
101	Martin, T. M.,	*Nepigon.	
102	Martin, T. M.,	Ptarmigan Grouse.	H. Hague, Esq.

NO.	ARTIST.	TITLE.	OWNER.
103	Fraser, J. A.,	*A September Afternoon.	W. Angus, Esq.
104	Vogt, A.,	Horses at Water.	W. Clare, Esq.
105	Fraser, J. A.,	A Gleam of Morning Sunlight.	G. Scott, Esq.
106	Edson,	On the Line between Canada and the United States.	A. I. Pell, Esq.
107	Martin, T. M.,	Indian Summer, Georgian Bay.	Dr. Givias.
108	Edson,	Burnham Beeches.	Government of Ontario.
109	Fraser, J. A.,	Dry Bed of a Stream.	R. S. Woods, Esq.
110	Way, C. I.,	The Owl's Head, Lake Memphremagog.	R. C. Jamieson, Esq.
111	Vogt, A.,	Returning Home.	W. I. Sterling, Esq.
112	Martin, T. M.,	A Forest Home.	The National Club.
113	Day, F.,	Winter Scene in Nova Scotia.	
114	Sharpe, C.,	The Captive.	Jas. Ewan, Esq.
115	Vogt, A.,	Taking a Breath of Morning Air.	Mrs. G. Frothingham.
116	Sandham, H.,	Old Fort Chambley, Richelieu River.	Miss Gale.
117	Sandham, H.,	On the Godbout River.	W. Notman, Esq.
118	Fraser, W. L.,	*Clouding on Mount Elephantis.	W. Angus, Esq.
119	Way, C. I.,	In the White Mountains.	T. Kershaw, Esq.
120	Fraser, W. L.,	A Pool in the Woods.	G. S. Brush, Esq.
121	Jacobi,	Falls of St. Anne.	I. McLachlan, Esq.
122	Vogt, A.,	The Last Ride.	W. F. Kay, Esq.
123	Martin, T. M.,	*"This Side up with Care."	
124	Bridgman & Foster,	Portrait.	
125	Schreiber, Mrs.,	Goat and Lamb.	A. Gilmore, Esq.
126	Jacobi,	Timber Slide.	P. G. C. K. T. Penn.
127	Bridgman & Foster,	Portrait of J. L. Hutchinson, Esq.	James Smith, Esq.
128	Martin, T. M.,	Fruit.	
129	Verner, F. A.,	Indians Gambling.	
130	Hanooch,	Autumn in Canada.	Government of Ontario.
131	Cresswell, W. N.,	The Wreck.	
132	Vogt,	*The Grey Battery.	H. McMahon, Esq.
133	Day, Forshaw,	Landscape.	
134	Forbes, J. C.,	Portrait of D. Forbes, Esq. [eral.	
135	Bridgman & Foster,	Ex-Governor Jewell, Postmaster-Gen.	
136	Fyte,	Fruit (old picture).	G. A. Gray, Esq.
136a	Lely, Sir Peter,	Portrait of General Vesey Abbott, "of the Blues," Major-General, and Receiver of all the Revenues of England in King William III.'s reign.	G. A. Gray, Esq.
137	Forbes, J. C.,	His Excellency the Earl of Dufferin, Governor-General of Canada.	
138	Martin, T. M.,	Grouse.	H. Hague, Esq.
139	Day, F.,	Sleighting in Nova Scotia.	
140	Martin, T. M.,	Summer Noon.	
141	Day, F.,	River scene.	
142	Day, F.,	River scene.	
143	Hancock, H.,	*Lake Inckbracke.	C. Parsons, Esq.
144	Lely, Sir Peter,	Portrait of Lady Molyneux.	G. A. Gray, Esq.
145	Day, F.,	Marble Head, Nova Scotia.	
146	Fraser, I. A.,	Oat Harvest in Lower Canada.	Government of Ontario.
147	Schreiber, Mrs.,	Olivia.	
"What Olivia really felt gave me some uneasiness. In this struggle between prudence and passion, her vivacity quite forsook her, and every opportunity for solitude was sought."			
148	Lely, Sir Peter,	Portrait of Lady Falkland.	G. A. Gray, Esq.
149	Schreiber, Mrs.,	Joan of Arc.	
150	Bridgman, I. W.,	Portrait of W. M. Frazer, Esq.	
151	De Witte,	Kidderminster Abbey, England.	G. A. Gray, Esq.
152	Day, F.,	Landscape.	
152a	Vandervelde,	Ship Firing a Salute.	G. A. Gray, Esq.
153	Lely, Sir Peter,	Portrait of the wife of Major Mordecai Abbott.	
154	Weston, J.,	Bunch of Grapes.	Wm. Notman.
155	Martin, Henry,	Flowers.	H. Langley.

## FRANCE.

*(Memorial Hall, Central Gallery East, North Side.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Muraton, Mrs. E., Paris,	Monkey amidst the Fruit.
2	Lesrel, A. A., Paris,	A Nobleman (reign of Louis XIII.).
3	Protais, P. A., Paris,	The Royal French Guard, 1776.
4	Guillon, Adolph, Paris,	Landscape.
5	Blanc, C. L., Paris,	Floral Offerings to the Holy Mother, Naples.
6	Veron, A. R., Paris,	Storm—Entrance to the Harbor of Boulogne.
7	Brest, Fabian, Paris,	Coffee-House in Persia.
8	Feyen-Perrin, F. N. A., Paris,	Melancholy.
9	Coninck, P. de, Paris,	Italian Shepherd-Girl.
10	Ségé, A., Paris,	Coast Scene.
11	Bartholdi, F. A., Paris,	Old California.
12	Rosier, A., Paris,	Evening in the Harbor of Venice.
13	Yon, Edmond C., Paris,	The River Seine, near Marolles.
14	Viger, H. J. L., Paris,	Empress Josephine and Family, 1814.
15	Bartholdi, F. A., Paris,	New California.
16	Feyen-Perrin, F. N. A., Paris,	Antique Dance.
17	Castiglione, G., Paris,	Visiting the Uncle Cardinal.
18	Lortet, L., Oullins,	View on Mont Blanc.
19	Curson, A. F. de, Paris,	The Serenade.
20	Bellel, J. J., Paris,	Landscape.
21	Michel, Ernest B., Montpellier,	Decameron.
22	Sain, E. A., Nanterre,	Family Scene in the Pyrenees.
23	Dupres, L. Victor, Paris,	Watering Cattle.
24	Hanoteau, H., Paris,	Feeding the Hens.
25	Legat, Léon, Paris,	Landscape with figures.
26	Antigna, I. P. A., Paris,	The Shipwrecked.
27	Antigna, I. P. A., Paris,	The First Step in Crime.
28	Curson, P. A. C., Paris,	Ruth and Boaz.
29	Benouville, A., Paris,	Suburbs of Palestrina, Italy.
30	Bellel, J. J., Paris,	Market-Street in Constantine
31	Masson, Miss A., Paris,	Still Life.
32	Brunet-Houard, P. A., Fontaine-bleau,	Dog and Monkey, Circus.
33	Ulmann, B., Paris,	Dancing Gipsy Girl (Spain).
34	Feyen-Perrin, F. N. A., Paris,	A Mother and Child.
35	Lebel, Edmond, Paris,	Italian Shepherd-Girl.
36	Montfallet, D., Paris,	The Minstrel.
37	Hillemacher, E. E., Paris,	Wedding Gifts.
38	Maignan, Albert, Paris,	Hélène at the Fountain.
39	Leyendecker, F. M., Paris,	Still Life.
40	Gide, T., Paris,	Studying.

*(Memorial Hall, Gallery E.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
41	Feyen, Eugène, Paris,	Regatta in the English Channel.
42	Pallière, J. L., Paris,	Visiting the Confessor.
43	Kuwasseg, C. J., Sen., Paris,	View in the Tyrol.



NO.	ARTIST.	TITLE.
44	Schenck, A. F., Ecouen,	Sheep in a Snow-Storm.
45	Saintin, Jules Emile, Paris,	Child and an Apple.
46	Notermann, Zach., Paris,	Before the Court.
47	Castiglione, G., Paris,	The Warrants (Haddon Hall Castle).
48	Duran, Carolus, Paris,	Portrait of Mlle. Croizette.
49	Schenck, A. F., Ecouen,	Sheep on the Heath.
50	Brest, Fabius, Paris,	Yard of the Grand Mosque in Trebizond.
51	Plassan, A. E., Passy,	In Front of the Looking-Glass.
52	Viger, H. J. L., Paris,	Remember the Poor.
53	Bellée, L. G. de, Paris,	Winter Landscape.

## GOBELIN TAPESTRIES.

NO.	ARTIST.	TITLE.
54	The Gobelin Manufactories in Paris, Beauvais, and Gobelin,	Collection of nine tapestries.

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
55	Chaillon, N., Laguy-le-Sec,	The Watermelon.
56	Landelle, Ch., Paris,	A Fellah Woman (Egypt).
57	Sain, E. A., Nanterre,	The Convalescent.
58	René, Jean Emile, Passy,	Landscape.
59	Colzmann, M., Paris,	A Court Scene.
60	Maillart, D., Paris,	The Bird's Nest.
61	Legat, L., Paris,	Village on the River-Bank.
62	Perrault, L., Paris,	Repose.
63	Clément, A. F., Paris,	The Death of Julius Cæsar.
64	Muraton, Mrs. E., Paris,	An Antique Room.
65	Brunet-Houard, P. A., Fontainebleau,	Interior of a Menagerie.
66	René, Jean Emile, Passy,	Winter Landscape.
67	Comte, P. C., Paris,	Training Rat-Dogs.
68	Saintin, Jules Emile, Paris,	Lonely.
69	Chartran, T., Paris,	Angelica and Roger.
70	Clément, A. F., Paris,	On the Sea-Shore.
71	Luminais, E. V., Paris,	Savages and Cattle.
72	Jacomín, A. L., Paris,	An Armorer of the Seventeenth Century.
73	Comte, P. C., Paris,	The King's Entertainment.
74	Adan, L. Emile, Paris,	Consultation.
75	Prion, Louis, Paris,	School for Young Satyrs.
76	Becker, Georges, Paris,	Rizpah protecting the Bodies of her Sons from the Birds of Prey (II. Samuel xxi. 20).
77	Maignan, Albert, Paris,	The Sentinel.
78	Groisillier, M. de, Paris,	The Meadows of Moussy.
79	Reynaud, F., Paris,	Market in Naples.
80	Harpignies, A. X., Paris,	Landscape near Renard.
81	Rudaux, E., Caudebec-les-Elbeuf,	Interruption.
82	Protais, P. A., Paris,	Soldiers at a Halt.
83	Leleux, Mrs. Emille, Paris,	The Doctors' Consultation.
84	Saintin, Jules Emile, Paris,	The Laundress.
85	Salabert, F., Paris,	View on Lake d'Annecy.
86	Faivre-Duffer, L. S., Paris,	Venus led by Love.
87	Ballot, Mrs. A., Paris,	Meditation.
88	Huas, P. A., Paris,	The First Coquetry.
89	Leleux, Armand, Paris,	Indiscretion.
90	Rapin, A. J., Paris,	Lake in the Woods of Marfontaine.
91	Rivey, A., Paris,	Young Venetian Girl.
92	Trupheine, A. J., Paris,	Drawing-School.
93	Lebel, Edmond, Paris,	Butcher in Trastevere (Italy).
94	Chevrier, I., Place de Beaune, Saône.	Captured Mice.

NO.	ARTIST.	TITLE.
95	Dubos, Miss A., Paris,	The Big Sister.
96	Luminais, E. V., Paris,	King Morvan.
97	Courdouan, V., Toulon,	Cannes (Alpine view).
98	Dumaresque, A., Paris,	The Congress of Geneva, 1873.
99	Benouville, A., Paris,	The Banks of the Nive.
100	Pabst, C. Alf., Paris,	Alsatian Bride.
101	Rosier, A., Paris,	Morning on the Lagoons of Venice.
102	Chevrier, I., Place de Beaune, Saone,	Mouse in the Library.
103	Saintin, Jules Emile, Paris,	Leda and the Swan.
104	Hirsch, Alphonse, Paris,	The First-Born.
105	Villebesseyx, G., Paris,	Staircase in the new Opera-House, Paris.
106	Dubouchet, H.,	St. Anthony's Day.
107	Zuber, H. J., Auteuil,	Forest in Normandy.

## SCULPTURE AND PORCELAIN.

NO.	ARTIST.	TITLE.
108 <sup>a</sup>	Sèvres Porcelain Manufactory,	Two vases.
109	Girard, N. J., Paris,	Iphigenia Sacrificed (marble).
111	Sèvres Porcelain Manufactory,	Vase.
112	Cordier, Ch., Paris,	Arabian Woman (marble and bronze statue).
113 <sup>a</sup>	Sèvres Porcelain Manufactory,	Two vases.
114	Bartholdi, A., Paris,	The Young Vine-Grower (bronze).
115 <sup>a</sup>	Sèvres Porcelain Manufactory,	Two vases.
116	Félon, Joseph,	L'Océani (granite).
117	Sèvres Porcelain Manufactory,	Vase.
118	Schroeder, Louis, Paris,	Etruscan Art.
119 <sup>a</sup>	Sèvres Porcelain Manufactory,	Two vases.

*(Memorial Hall, Gallery Z.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
120	Ballavoine, J. F., Paris,	The Bouquet.
121	Chevrier, J., Place de Beaune, Saone,	Rats in a Gothic Hall.
122	Coroenne, H., Paris,	Salutation.
123	Baucé, J. A., Paris,	Interior of a Sheep-Cote.
124	Montfallet, A., Paris,	The Juggler (time of Louis XIII.).
125	Lepesqueur, H., Paris,	The Beautiful Innkeeper.
126	Yon, Edmond C., Paris,	River Seine near Marolles.
127	Sebillot, Paul, Paris,	Trees on the Sea-Shore.
128	Laporte, M., Paris,	Betrothed.
129	Colsmann, M., Paris,	An Old History.
130	Salles-Wagner, Mrs. A., Nîmes,	Holy Mother and Child.
131	Chagot, E., Paris,	The Beach of St-Briac.
132	Lays, J. P., Lyons,	Basket with Flowers.
133	Delobbe, F. A., Paris,	Going Home from the Fields.
134	Fery, Miss V., Paris,	Artistic objects.
135	Daubigny, Karl, Paris,	Landscape.
136	Dameron, E., Paris,	The Pyramids.
137	Accard, E., Paris,	The Two Sisters.
138	Petit, Eugène, Paris,	Spring Flowers.
139	Blum, Maurice, Paris,	A Consultation.
140	Trouillebert, P. D., Paris,	Remembrance.
141	Blum, Maurice, Paris,	A Painful Operation.
142	Lays, J. P., Lyons,	Basket with Fruit.
143	Dumaresque, A., Paris,	Declaration of Independence, United States of America, 4th July, 1776.
144	Masure, J., Paris,	Shores of the Bay of San Juan.

NO.	ARTIST.	TITLE.
145	Sirouy, A., Paris,	A Japanese Lady.
146	Guillon, A., Paris,	After the Rain.
147	Chaillou, N., Lagny-le-Sec,	Public Assistance in Paris.
148	Chevrier, J., Place de Beaune, Saone,	Mouse in an Antique Room.
149	Morin, Léonard, Paris,	Flower-Market at the Madeleine.
150	Dupré, Victor, Paris,	Banks of the River Marne.
151	Nicholas, Miss M., Paris,	The Alphabet.
152	Houard-Brunet, P. A., Fontaine- bleau,	The Horse Fair.

## SCULPTURE.

NO.	ARTIST.	TITLE.
153	Perrey, N. A., Paris,	A Young Shepherd (marble).
154	Vasselot, A. de, Paris,	Portrait of M. Auzoux (bronze).
155	Devaux, F. A., Rouen,	Louis Bouilhet (marble).

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
156	Bouillard, A. M. L., Paris,	Hope.
157	Muraton, A., Paris,	A Monk.
158	Revel, C., Paris,	The Miser.
159	Bellard, E., Paris,	Banks of the River Oise (Winter).
160	Oudinot, A., Paris,	Low Tide at Villeville.
161	Notermann, Z., Paris,	Auction Sale.
162	Duverger, T. E., Ecouen,	The School.
163	Salles-Wagner, Miss A., Nimes,	The Little Fisher.
164	Montfallat, A., Paris,	Summer Amusements near Versailles.
165	Hirsch, A., Paris,	The Model.
166	Collette, A., Paris,	A French Peasant Girl.
167	Munier, E., Paris,	Refreshment.
168	Leleux, Armand, Paris,	At the Fountain.
169	Selim, Mrs. M., Paris,	Divine Love.

*(Memorial Hall, Gallery I.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
170	Gide, T., Paris,	An After-Dinner Nap.
171	Yvon, A., Paris,	Napoleon the First.
172	Duverger, Th. E., Ecouen,	End of the Harvest.
173	Bruelle, Gaston, Paris,	Fishing-Boats.
174	Cabuzel, A. H., Paris,	A Visit to the Louvre.
175	Daubigny, K. P., Paris,	Valley of Pourville (Normandy).
176	Glaize, T. T. L., Paris,	The Flower-Girl.
177	Busson, Ch., Montoire,	Before the Rain.
178	Hillemaeker, Ernest, Paris,	Napoleon I., with Goethe and Wieland.
179	Curzon, A. de, Paris,	View at Fort Napoleon.
180	Brissot de Warville, Saturnin, Compiègne,	Sheep-Pen.
181	Dumaresque, A., Paris,	Surrender of Yorktown.
182	Legat, L., Paris,	An Old Water-Mill.
183	Veron, A. R., Paris,	Banks of the River Seine.
184	Leleux, A., Paris,	The First Theft.
185	Bellel, J. J., Paris,	Suburbs of Constantine.
186	Richner, L. P. R., Paris,	Reminiscence of Raincy.
187	Clément, H., Paris,	A Fellah Girl (Egypt).
188	Vuagnat, F., Paris,	Landscape with Cattle.
189	Dechayes, Ch., Paris,	In the Forest.
190	Jacomini, H., Paris,	Check-mate.
191	Bellange, Eug., Paris,	Evening after the Battle.

NO.	ARTIST.	TITLE.
192	Rapin, A., Paris,	Morning—Valley of Bonneveux.
193	Willenich, M., Paris,	L'Ospedaletto, Venice.
194	Kienlin, Jules, Paris,	The Party.
195	Bar, Alexandre de, Paris,	View at Boulak.
196	Lebel, E., Paris,	View in Italy.
197	Berthelemy, E., Paris,	Fishing-Boats going to Sea.
198	Feyen-Perrin, F. N. A., Paris,	The Lesson in Anatomy.
199	René, Jean Emile, Passy,	Interior of the Bas-Breaux.
200	Baron, Stephane, Paris,	Faust and Margaret.
201	Lesrel, A. A., Paris,	The Halberd-Seller.
202	Willenich, M., Paris,	The Naval Battle.
203	Cetner, A. de, Paris,	Salambo.

## SCULPTURE AND PORCELAIN.

NO.	ARTIST.	TITLE.
204	Sèvres Porcelain Manufactory,	Vase.
205	Sèvres Porcelain Manufactory,	Vase.
206	Vasselot, A. de, Paris,	Chloe (bronze).
207a	Sèvres Porcelain Manufactory,	Two vases.
208	Sèvres Porcelain Manufactory,	Vase.
209	Cordier, Ch., Paris,	Christopher Columbus (bronze).
210	Sèvres Porcelain Manufactory,	Vase.
211	Marcellin, E., Paris,	Venus nursing Cupid (bronze).
212	Sèvres Porcelain Manufactory,	Vase.
213	Itasse, A., Paris,	Playing Cupid (marble).
214	Itasse, A., Paris,	John Crying (marble).
215	Itasse, A., Paris,	Boy and Snail (marble).
216	Itasse, A., Paris,	Sleeping Cupid (marble).
217	Itasse, A., Paris,	Christmas Gifts (marble).
218	Itasse, A., Paris,	Cupid Ready (marble).
219	Itasse, A., Paris,	The Last Hour (marble).
220	Itasse, A., Paris,	John Laughing (marble).
221	Itasse, A., Paris,	Day and Night (marble).
222	Lanson, E., Paris,	Bust (marble).
223	Roubeaud, L. A., Paris,	Child (marble).
224	Gautherin, J., Paris,	Two Good Friends.
225	Arson, A., Paris,	Partridges (bronze).
226	Loison, P., Paris,	The Young Convalescent (marble).
227	Félon, Paris,	Navigation (bronze).
228	Itasse, A., Paris,	Boy and Bird (marble).
229	Roubeaud, L. A., Paris,	A Young Girl (marble).
230	Galineau, J. A. de, Stockholm,	Queen Mab (marble).

(Memorial Hall, Grand Central Hall, Gallery B.)

## SCULPTURE AND PORCELAIN.

NO.	ARTIST.	TITLE.
231	Crauk, Gustave, Paris,	MacMahon (bronze).
232a	Sèvres Porcelain Manufactory,	Two vases (porcelain.)
233	Sèvres Porcelain Manufactory,	Two vases (porcelain).
233a	Sèvres Porcelain Manufactory,	Starting for Cythera (painting on porcelain).
234	Cordier, Charles, Paris,	Priestess of Isis (bronze).

(Annex, Gallery No. 32.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
235	Kienlin, Jules, Paris,	Louis XIII. and Anne of Austria.
236	Clairval, Mrs. M. T., Paris,	France in Mourning for Alsace and Lorraine.
237	Herpin, Léon, Paris,	The Hills of Moulineau.

NO.	ARTIST.	TITLE.
233	Zuber-Buhler, Paris,	The Dew.
239	Castelnau, P. de, Paris,	The Apollo Gallery in the Louvre.
240	Barrias, Felix J., Paris,	Electra (Victor Hugo).
241	Lambert, A. E., Paris,	The Marshes of Longpré.
242	Salles, J., Nîmes,	The Little Brother.
243	Zuber-Buhler, Paris,	The Springs.
244	René, J. E., Passy,	Forest of Fontainebleau.
245	Bonnefoy, H., Paris,	Thistles.
246	Allemand, G., Lyons,	A Young Girl with Fruit.
247	Sebron, H., Paris,	Niagara Falls (Winter).
248	Mellée, A. L., Paris,	A Forest Road.
249	Chagot, E., Paris,	Wreck of a Sloop.
250	Sirouy, Ach., Paris,	The Prodigal Son.
251	Berchère, N., Paris,	Gale on the Nile during the Flood.
252	Cassagne, Armand, Paris,	The Cross-Road in the Forest.
253	Rochenoir, I. de la, Paris,	The Flood.
254	Salanson, Miss E., Paris,	Rest.
255	Mathieu, O. P., Paris,	The Nymph Echo bewailing the Death of Narcissus.
256	Carrier, Belleuse P., Paris,	The Sleeping Child.
257	Laurent, Henri, Paris,	Feeding the Sheep.
258	Couder, E. Gustave, Paris,	Alone in the House.
259	Dameron, E. Ch., Paris,	The Oaks of Grandmoulin.
260	Villa, E., Paris,	The Vegetable-Stand.
261	Huas, P. A., Paris,	Soap-Bubbles.
262	Sebron, H., Paris,	A Hebrew Wedding at Tangiers, Morocco.
263	Notermann, Z., Paris,	A St. Bernard Dog on the Alps.
264	Masson, Miss A., Paris,	Flowers.
265	Valadon, J. E., Paris,	The Neighbor's Cat.
266	Veron, A. R., Paris,	Park at Senlis.
267	Moullion, A., Paris,	The Birds' Paradise.
268	Garnier, Jules, Paris,	The Bather.
269	Biliard, E., Paris,	Interior of a Studio.
270	Herst, A., Paris,	The Falls at Doubs.
271	Grandschamp, Pinel de, Paris,	Oriental Fantasy.
272	Salles, Jules, Nîmes,	A Young Girl of Procida.
273	Lacretelle, E., London,	The Royal Stables, London.

## SCULPTURE.

NO.	ARTIST.	TITLE.
274	Dalou, J., Paris,	The Needle-Woman (bronze).
275	Felon, J., Paris,	The Hour of Rest (marble).
276	Lecointe, Paris,	Good-Bye (bronze).
277	Martin, F., Paris,	Negro Hunting (bronze).
278	Doublemard, A., Paris,	Bacchus's Education (bronze).
279	Durst, M., Paris,	The Laughter (bronze).

(Annex, Gallery No. 38.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
280	Japy, Louis, Paris,	Valley in the Jura Mountains.
281	Martin, Ernest, Paris,	French Soldiers at the Foot of Mont Valérien.
282	Baux, Miss, Paris,	Salonican Woman.
283	Lacretelle, E., London,	Horses.
284	Jaquard, Claudius, Paris,	Prisoners redeemed at Morocco.
285	Duval, Jobbé, Paris,	Mysteries of Bacchus.
286	Landelle, Charles, Paris,	A Young Gipsy Girl.
287	Bar, Alexandre de, Paris,	Interior of a Forest.
288	Herst, A., Paris,	Spring.
289	Cherez, L.,	The Cours Venéon (Dauphiné).
290	Mathieu, O., Paris,	The Vanquished.

NO.	ARTIST.	TITLE.
291	Jadin, E., Paris,	Sheikh Salah dead in his Tent—Souvenir of the Algerine Sahara.
292	Herpin, L., Paris,	The River Marné at Chermévières.
293	Tortez, V., Paris,	The Nymph Echo.
294	Monginet, C., Paris,	The Friends of the House.
295	Rivey, A., Paris,	Young Girl (time of Louis XIII.).
296	Kock, Miss Elisa, Paris,	"You can't have any."
297	Hugard, Claude, Paris,	Oaks on the Banks of l'Etang de Guirlande.
298	Yvon, Ad., Paris,	Cæsar.
299	Berchère, N., Paris,	After the Simoon.
300	Laporte, Emile, Paris,	Gathering Grapes.
301	Maillart, D., Paris,	A Young Italian Girl and Mandolin.
302	Bellel, J. J., Paris,	The Valley of Alleverd.
303	Perrault, A., Paris,	The Bather.
304	Laporte, Emile, Paris,	Harvest Scene.
305	Collette, A., Paris,	The Reader.
306	Merry, B., Bougival,	"Don't touch."
307	Bideau, E., Paris,	The Little Quarrelers.

## SCULPTURE.

NO.	ARTIST.	TITLE.
308	Dubucand, Alfred, Paris,	A Chase in the Sahara (bronze).
309	Cecioni, Paris,	Child and Cock (bronze).
310	Méne, P. J., Paris,	A Falconer on Horseback (bronze).
311	Dubucand, Alfred, Paris,	Ostrich-Hunting (bronze).
312	Moulin, H., Paris,	A Secret (bronze).

(Annex, Gallery No. 37.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
313	Maignan, Albert, Paris,	The God of the Woods.
314	Callias, H., Paris,	A Concert (period of Charles the Bold).
315	Doux, Mrs. Lucile, Paris,	Revery.
316	Ferry, G., Paris,	Worship of Bacchus.
317	Breton, Emile, Pas-de-Calais,	The Canal of Courrières.
318	Trouillebert, —, Paris,	A Young Girl at the Fountain.
319	Collette, A., Paris,	The Railroad Depot.
320	Debat, Ponsan E., Paris,	The First Mourners.
321	Carrier, Belleuse P., Paris,	The Baptismal Plate.
322	Dubos, Miss A., Paris,	The Barber's Daughter.
323	Bellée, G. C., Paris,	The Pillars of Scornée.
324	Gudin, Théodore, Chateau de la Barre,	Escape of a Christian Slave.
325	Camorrté, Léon, Lille,	Cassandra.
326	Cassagne, A., Paris,	Through the Rocks.
327	Valandon, I., Paris,	Motherly Apprenticeship.
328	Fery, Miss L., Paris,	Roses and Fruit.
329	Muratou, A., Paris,	The Penitent.
330	Deshayes, Ch., Paris,	Cattle in Pasture.
331	Cabaillet, Lasalle, Paris,	Sculptors' Hall in the Exhibition of 1872.
332	Poncet, I. B., Paris,	Orpheus and Eurydice.
333	Cassagne, A., Paris,	Sully's Walk at Fontainebleau.
334	Durst, Aug., Puteaux,	Evening in the Kitchen.
335	Vely, A., Paris,	A Lady with a Guitar.
336	Landelle, Ch., Paris,	A Samaritan Woman.
337	Princeteau, R., Paris,	Portrait of Washington.

## SCULPTURE.

NO.	ARTIST.	TITLE.
338	Cain, A., Paris,	Cock Fight (bronze).
339	Méne, P. J., Paris,	Scottish Hunting Scene (bronze).

NO.	ARTIST.	TITLE.
340	Lechene, A. J. B., Paris,	Parrots (bronze).
341	Méne, P. J., Paris,	Hunter and Dogs (bronze).
342	Megrez, A., Paris,	The Youth David (bronze).

(Annex, Gallery No. 35.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
343	Cassinelli, H., Nice,	Decatur leaving the harbor of Tripoli, February, 1804, after having set fire to the Frigate Philadelphia.
344	Laguillermie, F., Paris,	Crossing the Run.
345	Cettner, A., Paris,	Faith.
346	Sebron, H., Paris,	Broadway, New York (Winter).
347	Adan, L. Emile, Paris,	Scene of the Inquisition.
348	Mallet, Joseph, Paris,	The Juggler's Family.
349	Zier, Edouard, Paris,	Julia.
350	Mallet, Joseph, Paris,	Boats on the Rhone.
351	Daubigny, Karl, Paris,	Shipping Oysters at Cancale.
352	Antigna, J. P. A., Paris,	Fascination.
353	Breton, Emile, Pas-de-Calais,	A Village in Winter.
354	Bar, Alexandre de, Paris,	The Death of Virginia.
355	Jacomín, A., Paris,	Bilboquet and his Companion.
356	Poncet, B., Paris,	Sully, of the Théâtre Français, in the part of "Orestes."
357	René, J. Emile, Paris,	Old Oaks.
358	Barras, Felix, Paris,	"My Husband is on the Sea."
359	Princeteau, R., Paris,	Horses frightened by the Railway Train.
360	Rouffio, P., Paris,	Herodias.
361	Jundt, G., Paris,	The Hair Fair in Auvergne.
362	Ségé, A., Paris,	Fountain at Nantois.
363	Durst, A., Puteaux,	Evening Landscape.
364	Jundt, G., Paris,	Coast Scene.
365	Rougeron, A., Paris,	Teasing.

## SCULPTURE.

NO.	ARTIST.	TITLE.
366	Cordier, Charles, Paris,	Young Grecian Girl (bronze).
367	Gobineau, de, Stockholm,	Valkyria after the Victory (marble).
368	Cordier, Charles, Paris,	Fellah Girl (bronze).
369	Bertaux, Miss Léon, Paris,	Ideal bust (marble).
370	Caille, J. M., Paris,	Bacchante playing with a Panther (bronze).

(Annex, Galleries Nos. 34, 36, 45.)

## WATER COLORS, ENGRAVINGS, ETC.

NO.	ARTIST.	TITLE.
371	Lalande, Maxime, Paris,	Crayon drawing.
372	Dumas, Em., Paris,	Flowers (water color).
373	Herst, A., Paris,	Pines in Provence (water color).
374	Mermet, C., Paris,	Butterflies (water color).
375	Courdouan, V., Toulon,	Valley in the Ardennes Mountains (crayon).
376	Cassagne, A., Paris,	View in a Forest (water color).
377	Courdouan, V., Toulon,	Moustier Ste. Marie (pastel).
378	Félon, Joseph, Paris,	Massacre of the Innocents (India ink).
379	Lestang, Parade de, Paris,	Autumn Flowers (water color).
380	Herst, A., Paris,	Aygalades, near Marseilles (water color).
381	Lalanne, M., Paris,	View of Bordeaux Harbor.
382	Félon, Joseph, Paris,	Engravings.
383	Félon, Joseph, Paris,	Notre Dame de Ste. Espérance.
384	Cassagne, A., Paris,	An Up-hill Road.

NO.	ARTIST.	TITLE.
385	Brunet, Debaines A., Paris,	Three etchings, after Turner.
386	Gaillard, F., Paris,	Van Eyck (etching).
387	Gaillard, F., Paris,	The Holy Heiress (etching).
388	Bellel, J. J., Paris,	The Ravine at Gravenoire (drawing).
389	Brunet, Debaines A., Paris,	An Italian Yard.
390	Gaillard, S., Paris,	Portrait of Pius IX.
391	Brunet, Debaines A., Paris,	Six etchings.
392	Bichot, Felix, Paris,	Japanese objects of art (etching).
393	Rajon, P. A., Paris,	Portrait of John Stuart Mill (etching).
394	Gaillard, F., Paris,	The Œdipus of Ingres (etching).
395	Thomas, Emile, Paris,	Marshal Prim (wood engraving).
396	Levasseur, J. G., Paris,	Miracle of the Loaves and Fishes, after Murillo.
397	Gaillard, F., Paris,	Portrait of Count de Chambord.
398	Levasseur, J. G., Paris,	Dante's Departure.
399	Rajon, P. A., Paris,	"Don't cry."
400	Lévy, Gustave, Paris,	La belle Jardinière.
401	Dubouchet, H., Auteuil,	Charon (engraving).
402	Potemont, M., Paris,	La Tonnellerie—a street in old Paris.
403	Brunet, Debaines A., Paris,	Remains of St. Charles Bridge.
404	Lalanne, M., Paris,	View of the Pont de la Concorde, Paris (engraving).
405	Flameng, Leopold, Paris,	Three etchings.
406	Thomas, E., Paris,	Mater Dolorosa (engraving).
407	Brunet, Debaines A., Paris,	Interior of the Church of St. Ouen.
408	Poncet, J. B., Paris,	Moses before the Burning Bush.
409	Rajon, P. A., Paris,	Portrait (etching).
410	Gaucherel, Léon, Paris,	Colleoni's Statue, Venice (etching).
411	Flameng, Leopold, Paris,	The Night Patrol (etching).
412	Lalanne, M., Paris,	Ten etchings.
413	Poncet, J. B., Paris,	Jesus bearing the Cross (engraving).
414	Robert, Jules, Paris,	Three portraits (engravings).
415	Varin, Eugène, Paris,	Spring (engraving).
416	Hildebrand, H., Paris,	Fifteen engravings.
417	Leveux, Paris,	The Concini Family (engraving).
418	Robert, Jules, Paris,	Three portraits (engraving).
419	Potemont, M., Paris,	La Merveilleuse.
420	Bellel, J. J., Paris,	Don Quixote and Sancho Panza (crayon).
421	Poncet, J. B., Paris,	Jesus riding into Jerusalem.
422	Lamotte, A., Chaville,	The One-Year Volunteer (engraving).
423	Lalanne, M., Paris,	Twelve etchings, representing the interior of Victor Hugo's house.
424	Thomas, E., Paris,	Turtle Fight (engraving).
425	Deblois, Ch., Paris,	The Betrothed (engraving).
426	Rajon, P. A., Paris,	The Sketcher.
427	Lalanne, M., Paris,	Paris in 1867 (etching).
428	Rajon, P. A., Paris,	The First-Born (etching).
429	Rajon, P. A., Paris,	Bible Lessons.
430	Gaillard, F., Paris,	Five engravings.
431	Coindre, G. J., Paris,	Twenty-one etchings.
432	Dubouchet, H., Auteuil,	Three engravings.
433	Jaquemart, J., Paris,	Five objects of art (etchings) from the Louvre.
434	Flameng, Leopold, Paris,	Six etchings.
435	Coindre, G. J., Paris,	Eleven etchings.
436	Gaillard, C. F., Paris,	Two engravings.
437	Dubouchet, H., Auteuil,	Portrait—Balthasar Castiglione.
438	Gaillard, F., Paris,	Holy Mother and Child.
439	Brunet, Debaines A., Paris,	The Church Della Salute, Venice.
440	Rajon, P. A., Paris,	Six etchings.
441	Dubouchet, H., Auteuil,	Charity (engraving).
442	Flameng, Leopold, Paris,	Etching.
443	Gaillard, F., Paris,	Dante (engraving).
444	Adeline, Jules, Rouen,	The Great Town-gate at Rouen.
445	Rajon, P. A., Paris,	Smoking (engraving).



NO.	ARTIST.	TITLE.
446	Gaillard, F., Paris,	Statue on the Tomb of one of the Medici, after Michael Angelo (etching).
447	Gaucherel, Léon, Paris,	Three etchings.
448	Laguillermie, F., Paris,	The Surrender of Breda.
449	Rajon, P. A., Paris,	Three etchings.
450	Robert, J., Paris,	Three engravings.
451	Adeline, Jules, Rouen,	The Cathedral at Rouen.
452	Gaucherel, Léon, Paris,	Four Actors of the Théâtre Français (etching).
453	Lévy, Gustave, Paris,	Damocles (engraving).
454	Jaquemart, J., Paris,	Collection of Wilson (five etchings).
455	Laplanche, Paris,	Nine engravings.
456	Robert, J., Paris,	Three engravings.
457	Jaquemart, J., Paris,	Collection of Wilson (five etchings).
458	Delauney, A., Paris,	Notre Dame, Paris (engraving).
459	Laplanche, Paris,	Six engravings.
460	Dubouchet, H., Paris,	Divine Retribution (engraving).
461	Flameng, Leopold, Paris,	Five etchings.
462	Gaucherel, Léon, Paris,	Three etchings.
463	Saintin, J. E., Paris,	Breakfast (crayon).
464	Heret, A., Paris,	Trees and Rocks (water color).
465	Lalanne, M., Paris,	Park scene (crayon).
466	Courdouan, V., Toulon,	Ghizeh, Egypt (water color).
467	Herst, A., Paris,	Road at Calvoir (water color).
468	Chagot, E. A., Paris,	Coffee-House in Cairo (water color).
469	Eliot, G., Paris,	Cock-Fight (pastel).
470	Chagot, E. A., Paris,	Views in Guernsey (water color).
471	Bellef, J. J., Paris,	Solitude.
472	Chagot, E. A., Paris,	View in Cairo (water color).
473	Eliot, G., Paris,	White Hen and her Chickens (pastel).
474	Herst, A., Paris,	The Great Fall at Chartreuse (water color).
475	Lalanne, M., Paris,	View at Fribourg (crayon).
476	Bellef, J. J., Paris,	Road from Biskra to Tooggoort, Algeria (water color).

(Annex, Galleries Nos. 34, 36, 45.)

## SCULPTURE.

NO.	ARTIST.	TITLE.
477	Bartholdi, A., Paris,	Génie funèbre (bronze).
478	Bartholdi, A., Paris,	Peace (bronze).
479	Bartholdi, A., Paris,	Genius in the Grasp of Misery (bronze).
480	Blanchard, I., Paris,	The Juggler (bronze).
481	Martin, Felix, Hermes,	Louis XI., at Péronne (bronze).
482	Cambos, J., Paris,	"He that is without sin among you, let him first cast a stone at her" (bronze).
483	Cambos, J., Paris,	La Cigale.
484	Itasse, A., Paris,	The Birth of Cupid (marble).
485	Ringel, D., Paris,	The Flute-Player (silvered bronze).
486	Moulin, H., Paris,	A Discovery at Pompeii (bronze).
487	Arson, A., Paris,	Island Birds (silver stand).
488	Itasse, A., Paris,	Sleeping Cupid (marble).
489	Bertaux, Mrs. Léon, Paris,	The Bather (bronze).
490	Chartrousse, E., Paris,	Héloïse and Abelard (bronze).
491	Barrias, L. E., Paris,	Spinning-Girl of Megara (silver bronze).
492	Doublemarche, A., Paris,	Scapin, after Molière (bronze).
493	Ross, A., Paris,	Bohemian at the Spring (bronze).
494	Pautrot, I., Paris,	Falcons Fighting (bronze).
495	Leschesne, Paris,	Lapwings (bronze).
496	Cain, A., Paris,	Pheasants' Nest (bronze).
497	Roubaud, L., Paris,	Winter (bronze).
498	Moreau, Vouthière, Paris,	Young Italian Shepherd (bronze).

*(Annex, Gallery No. 43.)***ARCHITECTURAL DESIGNS.**

NO.	ARTIST.	TITLE.
499	Devrez, Désiré Henri Louis, Paris,	Nine architectural designs for the church of the Sacré Cœur at Montmartre.
500	L'Heureux, Paris,	Eight architectural designs for La Faculté des Sciences.
501	Devrez, D. H. L., Paris,	Architectural drawings and photographs.
502	Devrez, D. H. L., Paris,	Two architectural water colors.
503	Devrez, D. H. L., Paris,	Two views at Mont St. Michel (water colors).
504	Devrez, D. H. L., Paris,	Two church designs for the diocese of Orleans.
505	Crepinet, A., Paris,	Four architectural designs for the church of the Sacré Cœur at Montmartre.
506	Etex, Antoine, Paris,	Photographs of public monument.
507	Penel, Jules, Paris,	Engravings of sculpture in the church of Vezelay.
508	Penel, Jules, Paris,	Engraving of Holy Trinity Church.
509	Lalande, Ch. de, Paris,	Eight architectural designs for the Théâtre de la Renaissance, Paris.
510	Picq, H., Paris,	Wall drawing of the Grand Salon Louis XVI.
511	Picq, H., Paris,	Design of a monument to be erected at Lisbon in memory of the Emperor Dom Pedro IV.

# GERMANY.

[Information regarding works for sale will be given at the desk in Gallery F, Memorial Hall.]

(Memorial Hall, Central Gallery, East.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Jaekel, H., Berlin,	Court-yard in Venice.
2	Koken, G., Berlin,	Landscape.
3	Mali, C., Berlin,	Evening.
4	Haber, R. von, Weimar,	Thomas the Shepherd.
5	Pixis, Theodore, Munich,	The Car of Thespis (Strolling Players' cart) in a Dilemma.
6	Farbarius, F. W., Düsseldorf,	Departure of Dutch Herring-Fishermen for the Dogger-Bank.
7	Hallatz, E., Berlin,	Harvest Festivities in Westphalia.
8	Dousette, L., Berlin,	Ship on the Strand.
9	Bellermann, Frd., Berlin,	American Forest.
10	Hahn, J., Munich,	Moonlight Landscape (Sternberg Lake).
11	Jungheim, C., Düsseldorf,	The Gosau Lake, with the Dachstein, in the Austrian Salt Regions.
12	Jungheim, C., Düsseldorf,	Lake of the Four Cantons.
13	Molnar, J., Pesth,	Consolation.
14	Ruths, V., Hamburg,	The Glacier of Argentières, Swiss Alps.
15	Deutsch, R. von, Berlin,	Sir John Falstaff.
16	Preller, L., Weimar,	Port of Safety, Norwegian Coast.
17	Hagn, L. von, Munich,	Monastery Festivities.
18	Schauss, F., Weimar,	Saint John.
19	Seybold, G. von, Munich,	Wanderers.
20	Gebhardt, L., Munich,	Lake Sim.
21	Gebhardt, L., Munich,	Lake Constance.
22	Thierach, L., Munich,	Easter Morn.
23	Fries, B., Munich,	Suburbs of Naples.
24	Becker, C., Berlin,	Venetian Nobleman tuning a Guitar.
25	Begas, O., Berlin,	Pauline Lucca.
26	Koerner, E., Berlin,	Mahmudi Canal near Alexandria.
27	Diets, Th., Carlsruhe,	Flight of an American Family (Revolutionary scene).
28	Güterbock, L., Berlin,	The Daughter of Herodias with the Head of John the Baptist.
29	Willich, C., Munich,	Girl from the Sabine Mountains.
30	Souchon, W., Weimar,	Marguerite (Faust).
31	Deutsch, R. von, Berlin,	"Know whom you trust."
32	Heck, R., Stuttgart,	The Crater of Vesuvius and Bay of Naples.
33	Reichert, F., Dresden,	The Blinding of Arthur.
34	Fischer, Helene von, Bremen,	Flowers.
35	Conrad, A., Berlin,	Landscape Studies.
36	Fries, B., Munich,	The Tiber at Rome.

(Memorial Hall, Gallery F.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
37	Kappis, A., Munich,	Fishermen surprised by a Storm.
38	Ockel, E., Berlin,	Oxen Ploughing (Mark of Brandenburg).
39	Swieszewski, A. von, Munich,	View of Pompeii, with Mount Vesuvius.

NO.	ARTIST.	TITLE.
40	Eschke, H., Berlin,	Coast of Capri.
41	Hertel, A., Berlin,	Summer Evening at the Brandenburger Gate, Berlin.
42	Brücke, G., New York,	Columbus discovering America.
43	Boyen, O. von, Munich,	Neptune riding the Waves.
44	Wider, W., Berlin,	Taking the Veil in Rome.
45	Harach, Count von, Berlin,	Capitulation of Sedan.
46	Bosch, E., Düsseldorf,	The Old Shepherd and his Granddaughter.
47	Laar, Ulrich, Berlin,	The Lesson Hour.
48	Erdmann, M., Berlin,	Morsum Cliff, on the Isle of Sylt.
49	Moras, W., Berlin,	Moonlight in the Harbor of Elsinore.
50	Laar, Ulrich, Berlin,	Caught in the Rain.
51	Wider, W., Berlin,	Girl Reading.
52	Steffeck, C., Berlin,	Mares in Pasture.
53	Plockhorst, B., Berlin,	Franz Liszt.
54	Schaus, F., Weimar,	A Dryad.
55	Gräf, G., Berlin,	Penserosa.
56	Deiker, J., Düsseldorf,	Dog with Fox.
57	Gräf, G., Berlin,	Lady with Rose.
58	Pohle, H., Düsseldorf,	Landscape.
59	Horst, L., Stuttgart,	Portrait of the German Emperor.
60	Meissner, E., Munich,	"Young Ones."
61	Poschinger, R. von, Munich,	Environs of Munich.
62	Bechtolsheim, G. von, Munich,	Landscape (Upper Bavaria).
63	Geibel, C., Weimar,	Concert in a Beer-Room.
64	Harling, E. von, Munich,	An Evening Melody.
65	Lier, A., Munich,	Autumn Landscape.
66	Preller, N., Weimar,	Autumn.
67	Jordan, R., Munich,	Happy Old Age.
68	Starkenborgk, J. N. T. von, Düsseldorf,	Tobacco-Gatherers.
69	Ortlieb, F., Munich,	The Last Rehearsal previous to going to the Singers' Festival.
70	Heger, H., Munich,	Audience-Hall in the Doge's Palace, Venice.
71	Ockel, E., Berlin,	The Critical Moment.
72	Hallatz, E., Berlin,	Snow-Storm in the Pustha (Russia).
73	Mücke, C., Düsseldorf,	Lullaby.
74	Ewers, H., Düsseldorf,	Duet in a Village Blacksmith's Shop.
75	Seibels, C., Düsseldorf,	Cattle.
76	Meyer, F., Munich,	Carousal after the Fair.
77	Hildebrand, E., Carlsruhe,	A Sentinel.
78	Steffeck, C., Berlin,	Steeple Chase.
79	Kylander, W., Schleissheim, near Munich,	Mouth of the Thames.
80	Seibels, C., Düsseldorf,	Cattle.
81	Hiddemann, F., Düsseldorf,	Nothing but Practice makes Perfect.
82	Mücke, C., Düsseldorf,	The Sailor's Home.
83	Hirschfelder, S., Munich,	Unexpected Issue.
84	Frey, W., Munich,	Cattle.
85	Spangenberg, G., Berlin,	The Firtation.
86	Becker, Q., Berlin,	After the Christening.
87	Hiddemann, F., Düsseldorf,	In the Park.
88	Dielitz, K., Berlin,	A Smoker (Upper Bavaria).
89	Steffeck, C., Berlin,	The Crown Prince of Germany, on the battle-field of Worth and Weissenburg.
90	Kretschmer, H., Berlin,	Vanity.
91	Marc, W., Munich,	Disagreement.
92	Frey, W., Munich,	Cattle.
93	Meyerheim, P., Berlin,	The King of the Forest.
94	Schlesinger, F., Munich,	Convalescent.
95	Kretschmer, H., Berlin,	Buying the Cradle.
96	Boser, F., Düsseldorf,	The Rural Sunday Toilet.
97	Risse, R., Düsseldorf,	The God and the Bayadere.

NO.	ARTIST.	TITLE.
98	Reichert, F., Dresden,	The First Proof-Sheet.
99	Meyer von Bremen, Berlin,	The Gossips.
100	Kornbeck, J., Stuttgart,	Sheep in the Pasture.
101	Neustätter, L., Munich,	The Strong Inclination.
102	Neustätter, L., Munich,	The Mouse.
103	Eggert, S., Munich,	Visit to the Village Artist.
104	Wider, W., Berlin,	Child and Doll.
105	Kornbeck, J., Stuttgart,	Good Friends.
106	Kornbeck, J., Stuttgart,	Sheep on the Mountain.
107	Souchon, W., Weimar,	Imogene.
108	Boser, F., Düsseldorf,	The Orphans.
109	Behmer, H., Weimar,	Interior of a House in Bethlehem.
110	Lutteroth, A., Berlin,	Lake Chiem, Italy.
111	Lutteroth, A., Berlin,	Near Naples.
112	Achenbach, A., Düsseldorf,	Storm at Vlissingen (Holland).
113	Boser, F., Düsseldorf,	Early Affliction.
114	Eckenbrecher, Th. v., Munich,	Picnic in Asia Minor.
115	Becker, Q., Berlin,	Before the Christening.
116	Hacker, H., Munich,	König Lake, from the Kessel-Alp.
117	Hacker, H., Munich,	Lake of the Four Cantons at Brunnen.
118	Grund, J., Baden-Baden,	Diana and Endymion.
119	Lasch, C., Düsseldorf,	The Orphans.
120	Richter, G., Berlin,	Hon. G. Bancroft.
121	Amberg, W., Berlin,	Ophelia.
122	Sturm, F., Berlin,	A Storm.
123	Sturm, F., Berlin,	Pilot-Boat.
124	Faber du Faur, Otto von, Munich,	Departure of Frederik V. from Prague after the Battle of the White Hills.
125	Schrader, Jul., Berlin,	Queen Elizabeth signing the Death-Warrant of Mary Queen of Scots.
126	Schwarz, A.,	Broken Flowers.
127	Molnar, J., Pesth,	Misty Veil.
128	Starkenborgk, J. N. T. von, Düsseldorf,	Harvest in Holland.
129	Dietrich, A., Dresden,	Faust and Marguerite (Prison Scene).
130	Wider, W., Berlin,	Return from Skating.
131	Rückart, F., Hamburg,	After the Chase.
132	Grund, J., Baden-Baden,	Queen Esther.
133	Heck, R., Stuttgart,	Natural Arch at Capri.
134	Braun, L., Munich,	Capitulation of Sedan.
135	Harach, Count von, Berlin,	Luther Intercepted.
136	Plochhorst, Prof., Berlin,	Christ appearing to Mary Magdalene.
137	Folingsby, G. F., Munich,	Lady Jane Grey's Triumph over Bishop Gardiner.
138	Wilberg, C., Berlin,	Grotto of Egeria, near Rome.
139	Lutteroth, A., Berlin,	Bismarck on his Estates in Lauenburg.
140	Behmer, H., Weimar,	Girl with Wild Roses.
143	Weber, P., Munich,	View near Munich.
144	Mayer, T., Munich,	Statue of Cincinnatus.
145	Hearth, S. D., Munich,	Evening in the Woods.

(Memorial Hall, Gallery F.)

### SCULPTURE.

NO.	ARTIST.	TITLE.
146	Schulz, M., Berlin,	Love conquers Strength.
147	Reusch, F., Berlin,	Group for fountain (bronze).

(Memorial Hall, Gallery J.)

### SCULPTURE.

NO.	ARTIST.	TITLE.
148	Herter, E., Berlin,	Orestes (bronze).
149	Herter, E., Berlin,	Antigone (bronze).

NO.	ARTIST.	TITLE.
150	Silbernagel, C.,	Statuette of Prince Bismarck (bronze).
151	Brunow, L., Berlin,	Statue of Count Moltke (bronze).
152	Andressen, E., Dresden,	Boy and Frog (group).
153	Brunow, L., Berlin,	Marble bust of Count Moltke.
154	Schweinits, R., Berlin,	Marble bust of the Crown Prince of Germany.
155	Ezekiel, M., Rome,	Relief in plaster.
155a	Toberenz, R., Berlin,	Ideal bust (marble).

## GALVANOPLASTY.

NO.	ARTIST.	TITLE.
156	Bavarian Museum of Art, Nuremberg,	Galvanoplastic representations of ancient art, especially of gold and silver.

## WATER COLORS.

NO.	ARTIST.	TITLE.
157	Meyerheim, P., Berlin,	Rhenish Landscape.
158	Meyerheim, P., Berlin,	French Village.
159	Meyerheim, P., Berlin,	Glass-Works in Bohemia.
160	Meyerheim, P., Berlin,	Evening in the Park.
161	Meyerheim, P., Berlin,	At the Brook.
162	Meyerheim, P., Berlin,	Twilight.
163	Spangenberg, L., Berlin,	Glacier in Engadin.
164	Spangenberg, L., Berlin,	Capuchin Cloister near Salzburg.
165	Spangenberg, L., Berlin,	Mount Pilatus, on the Lake of the Four Cantons.
166	Lage, Julia von der, Berlin,	Flowers.
167	Skarbina, F.,	Alpine Hospitality.
168	Friedrich, C. F., Dresden,	Thirteen water colors.

## PORCELAIN PAINTINGS.

NO.	ARTIST.	TITLE.
169	Ens & Greiner, Lauscha,	Porcelain paintings.
170	Deininger, C. H., Munich,	Portrait of a lady.

## ENGRAVINGS.

NO.	ARTIST.	TITLE.
171	Dinger, F., Coblenz,	Cinderella.
172	Bartehlmess, N., Düsseldorf,	In a House of Mourning—copper engraving after Vautier.
173	Krausse, A., Leipzig,	Engravings.
174	Duncker, A., Berlin,	Engravings.
175	Gräf, C., Dresden,	Thirty-six engravings.
176	Boehm, Hannah, Berlin,	Silhouettes.

## PHOTOGRAPHS.

NO.	ARTIST.	TITLE.
177	Berlin Photograph Co., Stroefor & Kirchner, New York, Agents,	Madonna San Sisto, after Raphael; Angels, after Raphael; St. Sixtus, after Raphael; St. Barbara, after Raphael; Morning Prayer, after Rosenthal; Elaine, after Rosenthal; Marie Stuart, after Neal; The Broken Pitcher, after Greuze.

## CHROMO-LITHOGRAPHS.

NO.	ARTIST.	TITLE.
178	Zettler, F. X., Munich,	Four frames containing chromo-lithographs.
179	Duncker, A., Berlin,	Chromo-lithographs.

**STAINED GLASS.**

NO.	ARTIST.	TITLE.
180	Zettler, F. X., Munich,	Stained glass window, Christian church.
181	Zettler, F. X., Munich,	Stained glass window, Mohammedan temple.
182	Zettler, F. X., Munich,	Stained glass window, Persian temple

**MEDALS.**

NO.	ARTIST.	TITLE.
183	Jungfer, A., Berlin,	Collection of coins and medals.

**MINERALOGY.**

NO.	ARTIST.	TITLE.
184	Jungfer, A., Berlin,	Pieces of amber, inclosing antediluvian insects, —ants, flies, gnats, sugar-mites, moths, scarabæi, spiders, etc.

*(Memorial Hall, Gallery B.)*

**STATUARY.**

NO.	ARTIST.	TITLE.
185	Manger, H., Berlin,	Colossal statue of Prince Bismarck (bronze).

# AUSTRIA.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the Austrian office, in Gallery G, Memorial Hall.]

(Memorial Hall, Galleries G and Z.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Makart, Hans, Vienna,	*Venice paying Homage to Caterina Cornaro.
2	Engl, Hugh, Liens,	*Still Life—game.
3	Russ, Robert, Vienna,	*Mill near Mals, South Tyrol.
4	Parmentier, Louisa von, Vienna,	*Landscape—suburbs of Munich.
5	Brunner, Joseph, Vienna,	*Landscape.
6	Schilcher, Fred., Vienna,	*Austrian Harvesters.
7	Rumpler, F., Vienna,	*The Friends.
8	Amerling, Fred., Vienna,	*Ideal female.
9	Schödl, Max, Vienna,	*Still Life.
10	Schödl, Max, Vienna,	*Still Life.
11	Friedländer, Fred., Vienna,	*Tasting the Wine.
12	Canon, John, Vienna,	*Girl with Fruit.
13	Hlavacek, Anthony, Vienna,	*View in the Palatinate of the Rhine.
14	Ruben, Francis Leo, Vienna,	*Roman Woman selling Pomegranates.
15	Thoren, Otto von, Paris,	*Norman Pasture.
16	George-Mayer, Augustus, Vienna,	*Bathsheba.
17	Parmentier, Louisa von, Vienna,	*Interior of the Castle Ruin "Taufers," in the Tyrol.
18	Minigerode, Lewis, Vienna,	*Sleeping Nymph.
19	Hoegel, Minna, Vienna,	*Still Life—game.
20	Lichtenfels, Edward, Chevalier, Vienna,	*Castle Court.
21	Graf, Lewis, Vienna,	*Nursery Maid.
22	Graf, Lewis, Vienna,	*The Love-Letter.
23	Schaeffer, Augustus, Vienna,	*"At the Sea" (desolate beach).
24	Riedel, Charles, Vienna,	*An After-Dinner Nap.
25	Bühlmayer, Conrade, Vienna,	*Landscape, with animals.
26	George-Mayer, Augustus, Vienna,	*Cupid's Warning.
27	Kratzer, Charles von, Vienna,	*Return from Hunting—Scene in Carinthia.
28	George-Mayer, Augustus, Vienna,	*Art going a-begging.
29	Ribarz, Ralph, Vienna,	*Cow and Sheep.
30	Gross, Augustus, Vienna,	*Villa d'Este, at Tivoli, near Rome.
31	Munsch, Leopold, Vienna,	*Alp Gschlöß, looking towards the Gross-Venediger.
32	Berres, Joseph von, Vienna,	*Caravan in the Caucasus.
33	Schilcher, Fred., Vienna,	*Bas-relief.
34	Hlavacek, Anthony, Vienna,	*Moonrise.
35	Ribarz, Ralph, Vienna,	*View in Venice.
36	Graf, Lewis, Vienna,	*An Interior.
37	Berres, Joseph von, Vienna,	*Husking in Hungary.
38	Lafite, Erneste, Vienna,	*Peasant Woman of Upper Austria.
39	Halauska, Lewis, Vienna,	*Village Road.
40	Lafite, Erneste, Vienna,	*Girl of Upper Austria.
41	Berres, Joseph von, Vienna,	*Children's Tenderness.
42	Russ, Francis, Vienna,	*Girl and Cat.
43	Stocker, Francis, Vienna,	*Overwhelmed with Grief.
44	Schilcher, Fred., Vienna,	*Bas-relief.
45	Otto, Henry, Vienna,	*View near Naples.



NO.	ARTIST.	TITLE.
46	Müller, Charles Leopold, Vienna,	*Monte Pelegrino, near Palermo.
47	Gaul, Gustavus, Vienna,	*Satanella.
48	Blaas, Charles, Vienna,	*Centaur carrying off a Nymph.
49	Oeconomio, A., Vienna,	Portrait of the artist.
50	Ribarz, Ralph, Vienna,	*Fish-Market at Chioggia.
51	Penther, Daniel, Vienna,	*Portrait (Darwin).
52	Paulinger, Francis von, Munich,	*A Chamois killed by a Fall.
53	Oeconomio, A., Vienna,	*A Study (head).
54	George-Mayer, Augustus, Vienna,	*A Study (female head).
55	Hoffmann, Joseph, Vienna,	*Ideal landscape.
56	Fux, Joseph, Vienna,	*"Sans-Souci" (strolling minstrel).
57	Penther, Daniel, Vienna,	*Portrait (Schopenhauer).
58	Lichtenfels, Edward, Chevalier, Vienna,	*Village Road in Upper Austria.
59	Schaeffer, Augustus, Vienna,	*Winter Landscape in Styria.
60	Schweninger, Rosa, Vienna,	*A Neapolitan.
61	Schaeffer, Augustus, Vienna,	*November Evening in the Prater, Vienna.
62	Felix, Eugene, Vienna,	*Pan and Bacchantes.
63	Russ, Francis, Vienna,	*Life in a Castle (Middle Ages).
64	Lichtenfels, Edward, Chevalier, Vienna,	*Copper-Mines of Agordo.
65	Nemes-Ransonnet, Eliza, Countess, Vienna,	*Interior of St. Stephen's, in Vienna.
66	Geyling, Ralph, Vienna,	*Garden Scene (Jesuit College).
67	Parmentier, Mary von, Vienna,	*Village Scenery in the Tyrol.
68	Obermüllner, Adolphus, Vienna,	*"Welcome Sounds," a hunting episode of the Austro-Hungarian North Polar Sledge Expedition, 1872-1874 (after Julius Payer).
69	Probst, Charles, Vienna,	*A Study (female figure).
70	Obermüllner, Adolphus, Vienna,	*The Lake of Constance seen from the Gebharts Mountains, Tyrol, at the beginning of a storm called "Föhnwind."
71	Gaul, Gustavus, Vienna,	*A Study (female head).
72	Paulinger, Francis von, Munich,	*Distrustful.
73	Gaul, Gustavus, Vienna,	*A Shepherdess.
74	Schöareither, George, Vienna,	*View of the High Tauern, Austrian Alps.
75	Mayer, Louis, Vienna,	*The Judgment of Paris.
76	Seclos, Godfrey, Vienna,	*The Vogelweidehof, near Botzen, South Tyrol, birthplace of Walter von der Vogelweide, the greatest lyric poet of the Germans in the Middle Ages.
77	Amerling, Fred., Vienna,	*Counsellor of the Middle Ages.
78	Geyling, Ralph, Vienna,	*Roman Pomegranate-Seller.
79	Grabowski, Andrew, Lemberg,	Portrait.
80	Obermüllner, Adolphus, Vienna,	*View of the Grum Alpe, with the Paluglacier, Upper Engadin, in Switzerland (morning).
81	Ruben, Francis Leo, Vienna,	*Venetian Society.
82	Berres, Joseph von, Vienna,	*Exhibiting a Foal (England.)
83	Ribarz, Ralph, Vienna,	*Ox-Team.
84	Fritsch, Melchior, Vienna,	*The Leopoldstein Lake in Styria.
85	Schrödl, Anthony, Vienna,	*An Interior at Hallstädt, in Upper Austria.
86	Graf, Lewis, Vienna,	*A Study (boy).
87	Müller, Charles Leopold, Vienna,	*Scene in the English Garden, Palermo, Sicily.
88	Nemes-Ransonnet, Eliza, Countess, Vienna,	*A Study (female head).
89	Hansch, Anthony, Salzburg,	*The Weissbachhorn, in the Pinzgau, Austrian Alps.
90	Alguet, J. M., Vienna,	Portrait of the artist.
91	Schrödl, Anthony, Vienna,	*Animals and Girl—scene in the valley of Ferleithen, near Gastein.
92	Blaas, Charles, Vienna,	*Ulysses and the Sirens.
93	Blume, Edmund, Vienna,	*The Grandmother's Tales.
94	Swoboda, Edward, Vienna,	*The Mermaid's Home.
95	Reichert, Charles, Vienna,	*A Bull-dog.
96	Reichert, Charles, Vienna,	*A Bull-dog.

NO.	ARTIST.	TITLE.
97	Hansch, Anthony, Salzburg,	*The Great Oetz Valley, Ferner (glacier), and Gurgl Lake.
98	Schams, Francis, Vienna,	*The Newly-Elected Mayor.
99	Berres, Joseph von, Vienna,	*Frader in Cattle of the Campagna di Roma.
100	Graf, Lewis, Vienna,	*"He loveth me."
101	Haanen, Remi van, Vienna,	*View of a Dutch town by Moonlight.
102	Graf, Lewis, Vienna,	*Rural Sports.
103	Parmentier, Louisa von, Vienna,	*Landscape.
104	Kuntz, G. A., Vienna,	*The Nun's Revery.
105	Blaas, Charles, Vienna,	*A Summer's Day in the Woods.
106	Parmentier, Mary von, Vienna,	*A Mill in the Tyrol.
107	Friedländer, Camilla, Vienna,	*Still Life (ham, etc.).
108	Parmentier, Mary von, Vienna,	*Village of Gaaden, near Vienna.
109	Schönn, Aloysius, Vienna,	*Siesta of an Oriental Woman.
110	Stainer-Knittel, Anne, Innsbruck,	Alpine Flowers.
111	Friedländer, Fred., Vienna,	*A Bashful Declaration of Love.
112	Huber, Ralph, Vienna,	*In the Pasture.
113	Friedländer, Camilla, Vienna,	*Antiquities and Books.
114	Rumpler, Francis, Vienna,	*Smiling Girl.
115	Friedländer, Camilla, Vienna,	*Still Life (fancy ware).
116	Russ, Robertus, Vienna,	*View in the Prater, Vienna, previous to the Exhibition of 1873.
117	Canon, John, Vienna,	*The Page.
118	Fritsch, Melchior, Vienna,	*Mountain Landscape (autumn).
119	Nemes-Ransonnét, Elisa, Countess, Vienna,	Portrait of the artist.
120	Hlavacek, Anthony, Vienna,	*Under the Maple-Tree.
121	Wertheimer, Gustavus, Vienna,	*The Moor and his Horse.

(Memorial Hall, Galleries G and Z.)

### STATUARY.

NO.	ARTIST.	TITLE.
122	Zumbusch, Caspar, Vienna,	His Majesty the Emperor of Austria (marble bust).
123	Gliber, James, Vienna,	*A Study (marble head).
124	Pils, Vincenz, Vienna,	A Portrait (plaster bust).
125	Costenoble, Charles, Vienna,	*Charles V. (marble bust).
126	Costenoble, Charles, Vienna,	*Maximilian I. (marble bust).
127	Wagner, Anthony, Vienna,	*Michael Angelo (bronze statue).
128	Gliber, James, Vienna,	*Madonna (wood).

### WATER COLORS.

NO.	ARTIST.	TITLE.
129	Tepa, Francis, Lemberg,	*The Polish Cavalry Captain Jastrzebiec.
130	Tepa, Francis, Lemberg,	*A Portrait.
131	Alt, Francis, Vienna,	*The Landing at Lucerne.
132	Alt, Francis, Vienna,	*The Ancient Fish-Market in Rome.
133	Alt, Francis, Vienna,	*Interior of the Cathedral, Milan.
134	Alt, Francis, Vienna,	*The Cursalon in the Stadt Park, Vienna.
135	Stöckler, Emanuel, Vienna,	*Girl at the Window.
136	Stöckler, Emanuel, Vienna,	*Campanile of San Marco, Venice.
137	Stöckler, Emanuel, Vienna,	*Fishmonger in Venice.
138	Stöckler, Emanuel, Vienna,	*The Grand Canal, Venice.
139	Hoffmann, Joseph, Vienna,	*View in the Herrengarten, Darmstadt.
140	Hoffmann, Joseph, Vienna,	*"The Beautiful Chestnut-Tree," Theaterhof, Darmstadt.
141	Hoffmann, Joseph, Vienna,	*Oberwesel on the Rhine.
142	Alt, Ralph, Vienna,	*Cathedral in Orvieto.
143	Alt, Ralph, Vienna,	*Arch of Constantine, Rome.
144	Pitner, Francis, Vienna,	*Tambourine-Girl, Molo di Gaeta, near Naples.
145	Pitner, Francis, Vienna,	*Punished Fickleness.
146	Tepa, Francis, Lemberg,	*A Peasant of Zolkiew, Galicia.
147	Tepa, Francis, Lemberg,	*Peasant Woman of Truskaviec, Galicia.
148	Tepa, Francis, Lemberg,	*The Polish General Josef Zabinski.

NO.	ARTIST.	TITLE.
149	Tepa, Francis, Lemberg,	*A Study (boy).
150	Lauer, Joseph, Vienna,	*Brier Bush (oil painting).
151	Pönninger, Miss C., Vienna,	*Still Life (a duck, in water colors).
152	Pönninger, Miss C., Vienna,	*Flowers (water colors).
153	Pönninger, Miss C., Vienna,	*Flowers (water colors).
154	Schuster, Miss Adele, Vienna,	*Alpine Flowers (oil painting).
155	Schuster, Miss Adele, Vienna,	*The Four Seasons (oil painting).

## ETCHINGS.

NO.	ARTIST.	TITLE.
156	Unger, W., Vienna,	*Marine view (after Van der Capellen).
157	Unger, W., Vienna,	*Portrait (after Velazquez).
158	Unger, W., Vienna,	*Portrait (after Palma Vecchio).
159	Unger, W., Vienna,	*Landscape (after Hobbema).
160	Unger, W., Vienna,	*Jacob's Blessing (after Govaers Flink).
161	Unger, W., Vienna,	*Catharine Cornaro (after Hans Makart).
162	Unger, W., Vienna,	*Katharina Formann (after Rubens).

## STATUARY.

NO.	ARTIST.	TITLE.
163	Pezzicar, F., Trieste,	*The Abolition of Slavery in the United States, 1863 (statue in bronze).

## PHOTOGRAPH.

NO.	ARTIST.	TITLE.
164		*Catharine Cornaro.

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
165	Angeli, Henry von, Vienna,	Portrait.
166	Angeli, Henry von, Vienna,	Portrait.

## MEDALS.

(Memorial Hall, Gallery O.)

NO.	ARTIST.	TITLE.
167	Scharff, Anthony, Vienna,	*Collection of medals.

# BELGIUM.

[Information regarding the sale of Works of Art can be obtained at the office of the Belgian Commission, Main Building.]

(Annex, Gallery No. 33.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Portaels, Jean, Brussels,	Morning.
2	De Biseau, Aristide, Brussels,	The River Semoy (Ardennes).
3	Gerboux, Auguste Charles, Mons,	The Mill of Lens, near Mons.
4	Roffmaen, François, Brussels,	Morning, Lake Koenigsee (Bavaria).
5	Slingeneyer, Ernest, Brussels,	A Christian Martyr in the Reign of Diocletian.
6	De Schampheler, Edmond, Brussels,	Nymwegen, on the River Wahal, Netherlands.
7	Musin, François, Brussels,	Harbor of Rotterdam in Rainy Weather.
8	Huygens, François Joseph, Brussels,	Bouquet of Thorn-Blossoms.
9	De Heuvel, Theodore, Brussels,	The Prayer.
10	Soubre, Charles, Liège,	Insurrection of St. Martin (history of Liège).
11	Coosemans, Joseph Theodore, Brussels,	Sunset.
12	Barnaba, Louis, Brussels,	Coast of France.
13	Mols, Robert, Antwerp,	The Dome of "Les Invalides," Paris.
14	Dauriac, Henry, Arlon,	Madonna.
15	De Keyser, Nicaise, Antwerp,	Rebecca.
16	Verhas, Jean, Brussels,	Sea-Shore at Blankenberghe.
17	De Bylandt, Count Alfred, Brussels,	Mountain View in Switzerland.
18	Langlet, Mrs. Caroline, Brussels,	Lighting Candles to the Holy Mother—Italian woman.
19	Cardon, Charles Léon, Brussels,	The Smoking-Room.
20	Robbe, Henry, Brussels,	The Destroyer.
21	De Meester, Raymond, Brussels,	Landscape.
22	Wagner, Jules, Antwerp,	Griseldis.
23	Walckiers, Gustave, Brussels,	The Town-House in Alost.
24	Verhoeven-Ball, Antwerp,	Preparing the Christmas Plum-Pudding.
25	Kuhnen, Victor, Brussels,	Steen Street in Antwerp.
26	Vinck, Franz, Antwerp,	The Pink Domino.
27	De Prater, Edmond, Brussels,	Stop!
28	Slingeneyer, Ernest, Brussels,	The Night of St. Bartholomew.
29	Tschaggeny, Charles, Brussels,	Flemish Stallion.
30	Van Keirsbilck, Jules, Brussels,	Crime and Superstition.
31	Steens, Edmond, Brussels,	Poultry.
32	Unterberger, F. R., Brussels,	Posilippo, near Naples.
33	Roosenboom, Albert, Brussels,	Motherly Love.
34	Robbe, Henry, Brussels,	Flowers and Fruit.
35	Cogen, Felix, Brussels,	Fisherwoman of the Zuyder-Zee, Netherlands.
36	Keelhoff, François, Brussels,	Autumn.
37	Walraven, Jean, Brussels,	The Right of Way.
38	De St. Cyr, Georges, Brussels,	Sentinel at the Entrance of the Harem.
39	Vinck, Franz, Antwerp,	The Confederates in the Presence of Marguerite of Parma.
40	Stroobant, François, Brussels,	The House of the Society of the Archers in Bruges.
41	Dandoy, Armand, Namur,	The Banks of the River Meuse.

NO.	ARTIST.	TITLE.
42	Stroobant, François, Brussels,	Dordrecht—View from the River Meuse.
43	Tschaggeny, Charles, Brussels,	Fire in the Stable.

## STATUARY.

NO.	ARTIST.	TITLE.
43a	Vinçotte, Thomas, Brussels,	The Female Captive (bronze statue).

(Annex, Gallery No. 39.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
44	Van den Broeck, Miss Clemence, Brussels,	Flemish House in A.D. 1600.
45	Berlin, Jean Joseph, Brussels,	A Confidential Talk.
46	Madiol, Adrien Jean, Brussels,	"Don't let him fly."
47	De Beughem, Count Charles, Brussels,	Landscape near Wiesbaden, Germany.
48	De Schampheleer, Edmond, Brussels,	River Moerdyk, Netherlands.
49	Lagye, Victor, Antwerp,	The Sculptor—close of the fifteenth century.
50	Raoux, Albert, Brussels,	Fruit.
51	Sodar, Franz, Dinant,	Reminiscence of Rome.
52	Bellemans, Joseph, Antwerp,	Ariosto at the Fountain.
53	Van Luppen, G. Joseph, Antwerp,	After the Rain—View from Anseremme, near Dinant.
54	Col, David, Antwerp,	In the Wine-Cellar.
55	Dekeghel, Jules, Ghent,	Pouting.
56	Goemans, Gustave, Melle, near Ghent,	Landscape in Flanders.
57	Asselbergs, Alphonse, Brussels,	Landscape at Mount Eagle.
58	Weber, Theodore Alexander, Brussels,	Using the Life-Boat, at Tynemouth, England.
59	Stallaert, Joseph, Brussels,	Palm Sunday (Albano costume, Italy).
60	Van Lil, Joseph, Antwerp,	The Last at Church.
61	Berlin, Jean Joseph, Brussels,	The Family Portrait.
62	Van Hove, Victor, Heyt-sur-Mer,	Child and Rabbit.
63	Starck, Jules, Brussels,	Louis XIV. visits young Madaadry, the Dead Defender of Montanedy.
64	De Keyser, Albert, Antwerp,	Harbor of Antwerp.
65	Cleynhens, Theodore, Antwerp,	An Archer of the Sixteenth Century.
66	Pauwels, Ferdinand, Antwerp,	Fire in the Village of Ruhla, Germany.
67	Nisen, Felix, Liège,	Fancy head.
68	Cartier, Modeste, Brussels,	Peasant Girl in the Woods.
69	De Vigne, Miss Malvina, Ghent,	Azaleas.
70	De Burbure, L., Brussels,	Harbor of Boulogne, France.
71	Beernaert, Miss Euphrosyne, Brussels,	Banks of the River Scheldt, near Antwerp.
72	Robert, Alexander, Brussels,	Three Friends.
73	De Schampheleer, Edmond, Brussels,	Domburg Banks, Island of Walcheren, Netherlands.
74	De Loose, Basile, Brussels,	Fair in a Flemish Village.
75	Van Luppen, G. Joseph, Antwerp,	Before the Thunder Storm—View in Flanders.
76	Mellery, Xavier, Brussels,	Young Girl from the Environs of Rome.
77	Gérard, Theodore, Brussels,	The Peddler.
78	Beernaert, Miss Euphrosyne, Brussels,	View of Domburg, Island of Walcheren, Netherlands.
79	De Vigne, Miss Emma, Ghent,	Lilacs.
80	Géniasson, Georges, Namur,	Old Hermitage of St. Hubert, Namur.
81	De Loose, Basile, Brussels,	The School.
82	Asselbergs, Alphonse, Brussels,	Harvest on the River Meuse.
83	Carabain, Jacques François, Brussels,	Church of St. Fermo, Verona, Italy.
84	De Biseau, Aristide, Brussels,	Reminiscence of the Ardennes Mountains.
85	Smits, Eugène, Brussels,	War.
86	Rosaeels, Jacques, Antwerp,	Mill on the River Scheldt.

NO.	ARTIST.	TITLE.
87	Meerts, Franz, Brussels,	Saturday in the Monastery.
88	Van Seben, Henry, Brussels,	The Dead Bird—winter landscape.
89	Portaels, Jean, Brussels,	Deception.
90	Huygens, François Joseph, Brussels,	Hazels and Roses.
91	Meerts, Franz, Brussels,	Announcement of Marriage.
92	De Baerdemaeker, Felix, Ghent,	View from the Highway Anthée, Harvest Time.
93	Vinck, Franz, Antwerp,	A Flemish Burgher's Wife in the Sixteenth Century.
94	Bouvier, A., Brussels,	The Coast of Bretagne, France.
95	Lampe, Louis, Brussels,	The Little Sleeper.
96	Carabain, Jacques François, Brussels,	St. Peter and St. Paul's Church, Antwerp.
97	Goemans, Gustave, Melle, near Ghent,	Banks of the River Meuse, near Yvoir.
98	Stallaert, Joseph, Brussels,	The Fan.
99	De Beughem, Count Charles, Brussels,	Kreuznach, on the Rhine, Prussia.
100	Guffens, Godefroid, Brussels,	The Crucifixion.
101	Walckiers, Gustave, Brussels,	The Fish-Market in Brussels.
102	Unterberger, F. R., Brussels,	The Rhine, between Bonn and Coblenz.
103	Smits, Eugène, Brussels,	Rosetta.
104	De Franchimont, Mrs. Emilie, Brussels,	Fruit.
105	Wagner, Jules, Antwerp,	Girl tending Geese.
106	De Keyser, Nicaise, Antwerp,	Dante and the Young Girls of Florence.
107	Van Luppen, G. Joseph, Antwerp,	Morning—View near Dinant.
108	Houzé, Florentin, Brussels,	The Last Moments of the Daughter of Grétry.
109	Keymeulen, Emile, Brussels,	Landscape in Provence, France.
110	Gérard, Theodore, Brussels,	An Inn in Württemberg, Germany.
111	Wagner, Jules, Antwerp,	Dangerous Medium.
112	Langlet, Mrs. Caroline, Brussels,	In Prison as a Vagabond.

(Annex, Gallery No. 39.)

## STATUARY.

NO.	ARTIST.	TITLE.
112a	Laumans, Jean André, Brussels,	The Exercise (bronze statue).

(Annex, Gallery No. 41.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
113	Plattoel, Jean David, Brussels,	The Broken Sledge—Zealand, Netherlands.
114	Carabain, Jacques François, Brussels,	Sotto Riva Street in Verona, Italy.
115	De Simpel, Bruno Alphonse, Brussels,	Location in France (Pas-de-Calais) where the Channel Tunnel is to be commenced.
116	Maswiens, Joseph, Louvain,	Church Interior in the Abbey of Everbode, Brabant.
117	Robert, Alexander, Brussels,	Discontent in the Harem.
118	Fourmois, Theodore, Brussels (deceased),	The Mill in the Campine.
119	Sodar, Franz, Dinant,	Destruction of the Home by Fire.
120	Barnaba, Louis, Brussels,	Boats ashore on the Coast of France.
121	Dillens, Adolphe, Brussels,	Fair in Zuid-Beveland, Zealand—"The Youth's Day."
122	Jacobs, Jacob, Antwerp,	Falls in Norway.
123	Guffens, Godefroid, Brussels,	Episode of the destruction of Pompeii.
124	Gérard, Theodore, Brussels,	The Discarded Lover.
125	Van Keirabilck, Jules, Brussels,	Desdemona.
126	Plumot, André, Antwerp,	On the Road to Market.
127	Bouvier, A., Brussels,	Coast of Flanders (Sunrise).
128	Houzé, Florentin, Brussels,	An Italian Shepherd Family.
129	De Meester, Raymond, Brussels,	View at Onegita, near the Cornice, Italy.

NO.	ARTIST.	TITLE.
130	Carabain, Jacques François, Brussels,	The Town-Gate at Wertheim, Germany.
131	Madiol, Adrien Jean, Brussels,	Hesitation.
132	Sebes, Pieter Willem, Brussels,	An Interior at Hindeloopen, Province of Friesland, Netherlands.
133	Barnaba, Louis, Brussels,	Sunset on the English Coast.
134	Bossuet, François Antoine, Brussels,	Rome—View from the River Tiber, the Fort and the Bridge of St. Angelo, and St. Peter's Cathedral.
135	Stallaert, Joseph, Brussels,	The Cellar of Diomedes—scene at the destruction of Pompeii.
136	Mols, Robert, Antwerp,	View at Saxenhausen, near Frankfort-on-the-Main, Germany.
137	Keymeulen, Emile, Brussels,	After the Hurricane.
138	Van Keirsbilck, Jules, Brussels,	The Duet.
139	Gérard, Theodore, Brussels,	Soup.
140	Madiol, Adrien Jean, Brussels,	Pancakes.
141	Meyers, Isidore, Antwerp,	View on the River Scheldt, in Winter.
142	Smits, Eugène, Brussels,	Studio Corner.
143	Gérard, Joseph, Brussels,	A Roman Pottery-Seller.
144	Berlin, Jean Joseph, Brussels,	In the Country.
145	Verhoeven-Ball, Antwerp,	Fruit and Game.
146	Gabriel, Paul Joseph Constantin, Brussels,	Landscape—Morning View in Netherlands.
147	Dekeghel, Jules, Ghent,	The Little Rogue.
148	Smits, Eugène, Brussels,	Italian Girl.
149	Gérard, Joseph, Brussels,	A Roman Triclinium.
150	Plumot, André, Antwerp,	The Shepherd.
151	Gérard, Theodore, Brussels,	The Birthday.
152	Wittkamp, Jean Bernard, Antwerp,	Byron's Parisina.
153	Gérard, Theodore, Brussels,	An Unwelcome Guest.
154	Van den Broeck, Miss Clemence, Brussels,	The Visit.
155	Musin, François, Brussels,	Sea-Shore at Scheveningen.
156	Wulfaert, Hippolyte, Brussels,	Waterwomen of Venice.
157	De Burbure, Louis, Brussels,	London Bridge, St. Catharine Docks, London.
158	De Groux, Charles, Brussels (deceased),	The Saviour.
159	Verheyden, François, Brussels,	The Removal.
160	De Baerdemaeker, Felix, Ghent,	The Village of Maureme, Ardennes Mountains.
161	Nisen, Felix, Liège,	In the Fields, Ardennes.
162	Mellery, Xavier, Brussels,	A Roman Peasant Woman.
163	Le Gendre, Léonce, Tournai,	Clytie (Ovid).
164	Van Seben, Henri, Brussels,	Winter Amusements.
165	Raoux, Albert, Brussels,	Flowers.
166	Bossuet, François Antoine, Brussels,	Granada, Spain.
167	Bellemans, Joseph, Antwerp,	Arias Montanus visits the Printer Plantyn in Antwerp.
168	Weber, Theodore Alexander, Brussels,	Shipwreck in Douarnenez Bay, Finistère, France.
169	Roosenboom, Albert, Brussels,	The Gems.
170	Weber, Theodore Alexander, Brussels,	Shipwreck on the Shore of Mariakerke, near Ostend.
171	Verheyden, Isidore, Brussels,	Landscape.
172	Gilbert, Albert, Brussels,	Good Counsels.
173	Speeckaert, Gustave, Antwerp,	Landscape—Puers, near Antwerp.
174	Ooms, Karel, Antwerp,	The First Ice of the Season.

## STATUARY.

NO.	ARTIST.	TITLE.
174a	Fassin, Adolphe, Brussels,	The Neapolitan Water-Seller (galvanoplastic statue).

(Memorial Hall, Gallery O.)

## STATUARY.

NO.	ARTIST.	TITLE.
175	Bouré, Antoine Félix, Brussels,	The Lizard (marble).
176	Bouré, Antoine Félix, Brussels,	A Lion (marble).
177	Bouré, Antoine Félix, Brussels,	A Lion (marble).
178	Bouré, Antoine Félix, Brussels,	A Recumbent Lion (marble).
179	Brunin, Charles, Mons,	Laughing Neapolitan (bronze).
180	Comein, Polydore, Brussels,	The Little Mother (terra-cotta).
181	Comein, Polydore, Brussels,	Awakening (terra-cotta).
182	Comein, Polydore, Brussels,	Winter (terra-cotta).
183	Comein, Polydore, Brussels,	Summer (terra-cotta).
184	De Groot, Guillaume, Brussels,	A Child (marble).
185	De Villez, Louis Henri, Mons,	Laughing Faun.
186	De Woelmont, Gustave, Baron, Brussels,	Bust of Miss De W. (marble).
187	Fassin, Adolphe, Brussels,	Roma (marble).
188	Fassin, Adolphe, Brussels,	Napoli (marble).
189	Fraikin, Charles Auguste, Brussels,	The First Child (marble).
190	Fraikin, Charles Auguste, Brussels,	The Drone Bee (marble).
191	Godebski, Cyprien, Neuilly, Paris,	The Drunken Moujik (marble).
192	Godebaki, Cyprien, Neuilly, Paris,	Russian Peasant Woman (marble).
193	Lefever, Edmond Florimond, Brussels,	Piccolo (terra-cotta).
194	Lefever, Edmond Florimond, Brussels,	Piccola (terra-cotta).
195	Lefever, Edmond Florimond, Brussels,	Summer (terra-cotta).
196	Lefever, Edmond Florimond, Brussels,	Remembrance (terra-cotta).
197	Rodin, Auguste, Brussels,	The Renaissance.
198	Rodin, Auguste, Brussels,	Loving Thoughts.
199	Rodin, Auguste, Brussels,	The Rose.
200	Rodin, Auguste, Brussels,	Alsacian Woman.
201	Rodin, Auguste, Brussels,	Spring.
202	Rodin, Auguste, Brussels,	Autumn (small grapes).
203	Rodin, Auguste, Brussels,	Large Grapes.
204	Rodin, Auguste, Brussels,	Field Flowers.

## MEDALS.

NO.	ARTIST.	TITLE.
205	Wiener, Charles, Brussels,	Frame with the following medals : 1. The Orange Society medals. 2. Portrait of Jonas Webb. 3. The Cathedral in Seville, interior and exterior. 4. Portrait of A. Rodenbach. 5. The Cathedral of Belem (Portugal). 6. "Notre Dame" in Paris. 7. The King of Holland. 8. Medallion of Jenner. 9. Medallion—awarded for industries in Holland. 10. A. Rodenbach. 11. Two medallions—awarded by the Society of the "Seine-Inférieure." 12. Two medallions—Prince Albert of England. 13. Two medallions—The Exhibition in Oporto, Portugal. 14. Award from the Lisbon Academy of Fine Arts. 15. The Prison in Arlon. 16. Anthony Van Dyck. 17. Benjamin Rumford. 18. Queen Victoria. 19. The Queen of England. 20. A "5000 reis" silver piece, Portuguese money. 21. Benjamin Rumford. 22. Sir Moses and Lady Montefiore.



NO.	ARTIST.	TITLE.
	Wiener, Charles, Brussels,	23. A. Hersen.
		24. Baron de St. G�nois.
		25. M. C. Pycke, Baron, Governor of the Province of Antwerp.
		26. National Bank in Brussels.
		27. Cardinal Sterckx.
		28. Interior of the Cathedral in Cologne.
		29. The King of the Belgians.
		30. Cardinal Dechamps.
		31. Interior of the Cathedral in Toledo, Spain.
		32. Stock Exchange in Brussels.
		33. Von Gensau.
		34. Medallion from a Fair.
		35. An English Shilling.
		36. Belgian Postage Stamp.

ARTISTIC BRASS WORK.

NO.	ARTIST.	TITLE.
306	Labacr, Jean Jacques, Antwerp,	William the Silent.
307	Labacr, Jean Jacques, Antwerp,	Marnix de Sainte-Aldegonde, Mayor of Antwerp.
308	Labacr, Jean Jacques, Antwerp,	Van Strale, Mayor of Antwerp.
309	Labacr, Jean Jacques, Antwerp,	Brederode, Chief of the Gueux.
310	Labacr, Jean Jacques, Antwerp,	Saint John (after Quentin Matsys).
311	Labacr, Jean Jacques, Antwerp,	M. Emanuel Hiel.

DECORATED FAIENCE.

NO.	ARTIST.	TITLE.
112	Dauge, Franz, Brussels,	Battle scene.
113	Dauge, Franz, Brussels,	Landscape, with Cattle.
114	Dauge, Franz, Brussels,	The Conqueror's Return.
115	Dauge, Franz, Brussels,	Cupids.
116	Dauge, Franz, Brussels,	Cupids.
117	Dauge, Franz, Brussels,	Cupids.
118	Dauge, Franz, Brussels,	Interior.
119	De Mol, Adolphe, Brussels,	Bacchante playing the Tambourine.
120	De Mol, Adolphe, Brussels,	Bacchante.
121	De Mol, Adolphe, Brussels,	Bacchante.
122	De Mol, Adolphe, Brussels,	The Holy Family (after Rubens).
123	Meunier, Miss Georgette, Brussels,	The Holy Family.
124	Meunier, Miss Georgette, Brussels,	Diana (after Vouet).
125	Meunier, Miss Georgette, Brussels,	Spring (after Boucher).
126	Meunier, Miss Georgette, Brussels,	Harvest (after Boucher).
127	Tourteau, Edward, Brussels,	The Contented Hermit.
128	Tourteau, Edward, Brussels,	Decorated dish.
129	Tourteau, Edward, Brussels,	Decorated dish.
130	Tourteau, Edward, Brussels,	Cupids.
131	Tourteau, Edward, Brussels,	Cupids.
132	Tourteau, Edward, Brussels,	Odalisque.
133	Tourteau, Edward, Brussels,	Cupids.
134	Tourteau, Edward, Brussels,	Venus.
135	Tourteau, Edward, Brussels,	The Infant Jesus.
136	Tourteau, Edward, Brussels,	The War-Flag.
137	Tourteau, Edward, Brussels,	Holy Woman.
138	Tourteau, Edward, Brussels,	Autumn.
139	Tourteau, Edward, Brussels,	The Dance.
140	Tourteau, Edward, Brussels,	The Dance.
141	Tourteau, Edward, Brussels,	Cupids.
142	Tourteau, Edward, Brussels,	Cupids.
143	Tourteau, Edward, Brussels,	The Hours of the Day.
144	Tourteau, Edward, Brussels,	Goat.
145	Tourteau, Edward, Brussels,	Cupid.
146	Tourteau, Edward, Brussels,	Dish, style of Louis XV.

## DECORATED EARTHENWARE.

NO.	ARTIST.	TITLE.
247	Tourteau, Edward, Brussels,	Nessus eloping with Dejanira.
248	Tourteau, Edward, Brussels,	Rape of the Sabines.
249	Tourteau, Edward, Brussels,	Animals.
250	Tourteau, Edward, Brussels,	Animals.
251	Tourteau, Edward, Brussels,	The Laugher and the Shepherdess.
252	Tourteau, Edward, Brussels,	The Child with the Butterfly.
253	Tourteau, Edward, Brussels,	Amphitrite.
254	Tourteau, Edward, Brussels,	Venus and Vulcan.
255	Tourteau, Edward, Brussels,	The Elopement.
256	Tourteau, Edward, Brussels,	The Elopement.
257	Tourteau, Edward, Brussels,	The Thinker.
258	Tourteau, Edward, Brussels,	The Dreamer.
259	Tourteau, Edward, Brussels,	Boy's head.
260	Tourteau, Edward, Brussels,	Girl's head.
261	Tourteau, Edward, Brussels,	The Rat-Catcher.
262	Tourteau, Edward, Brussels,	A Man's head.
263	Tourteau, Edward, Brussels,	A Woman's head.
264	Tourteau, Edward, Brussels,	Love is Conqueror.
265	Tourteau, Edward, Brussels,	The Broken Pitcher.
266	Tourteau, Edward, Brussels,	A Gothic Triptych.
267	Tourteau, Edward, Brussels,	Child's head.
268	Tourteau, Edward, Brussels,	Boy's head.
269	Tourteau, Edward, Brussels,	Girl's head.
270	Volkaerts, François Xavier, Brussels,	Cupids.
271	Volkaerts, François Xavier, Brussels,	Ducks.
272	Volkaerts, François Xavier, Brussels,	Venus and Cupid.

## PHOTOGRAPHS.

NO.	ARTIST.	TITLE.
273	Royal Belgian Society for Photography,	Album of photographs (after the Belgian painter Wiertz, deceased)

## ARCHITECTURAL DRAWING.

NO.	ARTIST.	TITLE.
274	De Curte, Louis, Brussels,	Plans for a cathedral in the Gothic style of the thirteenth century.

(Annex, Gallery No. 23.)

## DRAWINGS.

NO.	ARTIST.	TITLE.
275	Demannez, Joseph, Brussels,	The Christian Martyr.

## ENGRAVINGS.

NO.	ARTIST.	TITLE.
276	Biot, Gustave, Brussels,	The Triumph of Galatea (after Raphael).
277	Biot, Gustave, Brussels,	Portrait.
278	Biot, Gustave, Brussels,	Portrait of the Emperor of Austria.
279	Danse, Auguste, Mons,	The Sorceress.
280	Danse, Auguste, Mons,	The Last Moments of Charles V.
281	Danse, Auguste, Mons,	The Wedding.
282	Danse, Auguste, Mons,	The Martyrdom of Saint Peter.
283	Danse, Auguste, Mons,	The Virgin on Calvary.
284	Demannez, Joseph, Brussels,	The Christian Martyr.

NO.	ARTIST.	TITLE.
285	D'Inghuem, Le Bailly, Brussels,	Frame containing etchings.
286	D'Inghuem, Le Bailly, Brussels,	Frame containing etchings.

OIL PAINTING.

NO.	ARTIST.	TITLE.
287	Wittkamp, John Bernard, Antwerp,	Cruelty of Adolph towards his father, Duc de Guelders (Molay's History of the Netherlands).

WATER COLORS.

NO.	ARTIST.	TITLE.
288	Beeckman, Marie Ferdinand de, Brussels,	View at Tervueren, Belgium.
289	Beeckman, Marie Ferdinand de, Brussels,	View in the Forest of Fontainebleau.
290	Robinson, John, Brussels,	"She is a winsome wee thing."—(Burns.)

# NETHERLANDS.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the office of the Netherlands Commission, in Annex, Gallery 13.]

(Annex, Gallery No. 15.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Van Lockhorst, D., Utrecht,	*Field of Heather near Epe.
2	Heemskerk, Van Beest E. v., the Hague,	*Storm near Dover.
3	Taanman, J., Amsterdam,	*Flower-Girl.
4	Koekkoek, H., Amsterdam,	*Beach on the French Coast.
5	Koekkoek, H., Jr., London,	*Stormy Weather at Sea.
6	Israels, J., the Hague,	The Card-Players.
7	Egenberger, J. H., Groningen,	*Rain and Sunshine.
8	Van Deventer, J. F., the Hague,	*Holland Landscape.
9	Gruijter, W., Jr., Amsterdam,	*Dutch Fishermen caught in a Rain-Storm.
10	Kate, J. Mari H. Ten, the Hague,	*Good Friends.
11	Mesdag, van Houten, Mrs., the Hague,	*In the Downs.
12	Stroebel, J. A. B., the Hague,	*The Deacons of the Silversmiths' Guild conferring a Freeman's Certificate—seventeenth century.
13	Eerelman, O., Brussels,	*A Directress of the Orphan Asylum at Groningen—about the beginning of this century.
14	Bilders, J. W., Amsterdam,	*Landscape near Vorden.
15	Cunaeus, C., Amsterdam,	*In Summer.
16	Bischof, C., the Hague,	*Dieuwke.
17	Kool, S., Amsterdam,	*Saturday Afternoon in Friesland.
18	Stortenbeker, P., the Hague,	*Landscape with Cattle.
19	Canta, J. A., Rotterdam,	*Summer in the Fields.
20	Bosboom, J., the Hague,	Church at Treves.
21	Hanrath, Th.,	*A Connoisseur.
22	Haanen, Adriane, Mrs., Oosterbeek,	*Flowers.
23	Mesdag, H. W., the Hague,	*Storm on the North Sea.
24	Martens, W. J., Rome,	*Vestibule of St. Mark in Venice.
25	Rust, J. A., Amsterdam,	*View of Amsterdam—sixteenth century.
26	Oppenoorth, W. J., Antwerp,	*A Pool at Lent—Evening.
27	Apol, L., the Hague,	*Early Morning.
28	Valkenburg, H., Amsterdam,	*Domestic Happiness.
29	Koster, E., and Savry, H., Haarlem,	*River View near Dordrecht.
30	Cunaeus, C., Amsterdam,	*Annexation.
31	Postma, G., Haarlem,	*The Barber of Seville.
32	Huybers, J. D., Zwolle,	*Four Weeks after St. John's Day.
33	Vos, M., Miss, Oosterbeek,	*Still Life.
34	Soeterick, Th., Utrecht,	*Solitude.
35	Lingeman, L., Baarn,	*Trial of a Prisoner of War.
36	Van Hove, J. H., the Hague,	*Good Tidings.
37	Scholten, J. H., Haarlem,	Sunday Morning.
38	Savrij, H., Haarlem,	*Pastoral Scene near Haarlem.
39	Rochussen, Ch., Rotterdam,	*Cheese-Market in North Holland.
40	Cunaeus, C., Amsterdam,	*In Winter.
41	Heemskerk, Van Beest E. v., the Hague,	Off the Island of Texel.
42	Roth, G. A., Amsterdam,	*Mill at Vorden.

NO.	ARTIST.	TITLE.
43	Verveer, S. L. (deceased),	Village of Scheveningen.
44	Seggern, F. van, Amsterdam,	*Evening near Calmpthout.
45	Masurel, J. E., Amsterdam,	*Recreation.
46	Kate, H. F. C. Ten, the Hague,	*A Morning Concert.
47	Hazeu, A. C., Haarlem,	*Landscape in Gelderland.
48	Springer, C., Amsterdam,	*View of Toren Street in Enkhuyzen.

(Annex, Gallery No. 5.)

OIL PAINTINGS.

NO.	ARTIST.	TITLE.
49	Hilverdink, Johan, Amsterdam,	*Landscape on the Mediterranean Coast.
50	Verveer, Elchanon, the Hague,	*The Widow.
51	Vester, W., Heemstede,	*Landscape in Holland.
52	Nakken, W. C., the Hague,	Packhorses in the Woods of St. Gation, Normandy.
53	Oppenoorth, W. I., Antwerp,	*A Watering-Place.
54	Bisschop, C., the Hague,	At Church.
55	Koekkoek, W., the Hague,	*Scene in Kuilenburg.
56	Ronner, Mrs. Henriette, née Knip, Brussels,	*Hare in his Coyot.
57	Vogel, J. G., the Hague,	*On the Heath.
58	Henkes, Gerke, the Hague,	*A Critical Moment.
59	Greive, J. C., Jr., Amsterdam,	*The Dock at Amsterdam.
60	Israels, J., the Hague,	In the Grain-Field.
61	Roelofs, W., Brussels,	Landscape.
62	Van Everdingen, A., Utrecht,	*On the River-Side.
63	Hanedoes, L., and Verveer, S. L., the Hague,	*Woodland, with Figures.
64	Sande Backhuijsen, Mrs. G. J. v. d., the Hague,	*Bouquet of Roses.
65	Tom, J. B., the Hague,	Heath with Sheep.
66	Bilders, J. W., Amsterdam,	*Landscape.
67	Israels, J., the Hague,	After the Storm.
68	Gempt, B. te, Amsterdam,	Dog.
69	Trigt, H. A. van, Hilversum,	*Norwegian Women bringing Children to be Baptized, and being welcomed by the Clergyman.
70	Maris, Willem, the Hague,	*The First Lesson in Swimming.
71	Verachuur, W., Jr., Amsterdam,	*Horse in the Stable.
72	Philippeau, C. F., Amsterdam,	On the Lookout.
73	Everdingen, A. v., Utrecht,	*Landscape with Grain-Fields.
74	Verachuur, W., Jr., Amsterdam,	*Dog.
75	Weissenbruch, Jan, the Hague,	Loerdam.
76	Vos, Miss M., Oosterbeek,	*Still Life.
77	Schenkel, J. J., Amsterdam,	*St. Nicholas Church at Amsterdam.
78	Flier, H. R. v. d., Baarn,	*In the Stable.
79	Hollander, H., Amsterdam,	*Rembrandt disposing of his Picture at the Hague.
80	Koster, E., Haarlem,	*On the Beach.
81	Windt, P. P., the Hague,	*Tough Beans.
82	Heerebaarth, G., Amsterdam,	*Suburbs of a Dutch City.
83	Sande Backhuijsen, Mrs. G. J. v. d., the Hague,	*Fruit.
84	Koekkoek, H. P., Jr., London,	*Landscape near Guilford, England.
85	Borselen, I. W. van, the Hague,	A Holland Landscape.
86	Maaten, J. J. van der, Apeldoorn,	The Canal of Apeldoorn.
87	Testas, W. de Famars, Brussels,	*A Barber's Shop at Cairo.
88	Mesdag, H. H., the Hague,	*Evening on the Beach.
89	Sadee, Th., the Hague,	The Potato-Gatherers.
90	Ronner, Mrs. Henriette, Brussels,	*The Last Hope.
91	Scholten, J. A., Haarlem,	*Summer Flowers.
92	Borselen, J. W. v., the Hague,	*Landscape.
93	Kruseman, Elten van, New York,	*Holland Landscape.
94	Kluyver, P. L. F., Amsterdam,	*Winter Evening near Amersfoort.

NO.	ARTIST.	TITLE.
95	Schipperus, P. A., Rotterdam,	*Holland Landscape.
96	Lingeman, L., Baara,	A Conference.
97	Gempt, B. te, Amsterdam,	Three Dogs.
98	Greive, J. C., jr., Amsterdam,	*The River Y, near Amsterdam.
99	Steffelaar, J., Amsterdam,	*In the Church Kitchen.
100	Kate, J. Mari H. Ten, the Hague,	*On the Beach.
101	Boks, M., the Hague,	*Landscape.
102	Taanman, J., Amsterdam,	*Sheriff's Hall in the old Town Hall at Kampen —with figures from the sixteenth century.
103	Craeyvanger, R., Amsterdam,	*The First Pair of Spectacles.
104	Roelofs, W., the Hague,	*A Thunder-Storm.
105	Heemkerk, Van Beest E. v., the Hague,	The River Y, near Amsterdam.
106	Gempt, B. te, Amsterdam,	*The Cat Pretending to have been Hanged (after La Fontaine).
107	Kate, H. F. C. Ten, the Hague,	*The Fortunes of War—seventeenth century.
108	Apol, L., the Hague,	In the River.
109	Mauve, A., the Hague,	*Hauling up the Fishing-Boat.
110	Paling, John I., Amsterdam,	*Sunday Morning.
111	Bosboom, J., the Hague,	*The New Church at Amsterdam.
112	Mesdag, H. W., the Hague,	*Winter near the Hague.
113	Vogel, J. G., the Hague,	*Holland Landscape.

(Annex, Gallery No. 13.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
114	Riegen, N., Amsterdam,	A Calm.
115	Heijl, M., Amsterdam,	*Evening.
116	Lingsman, L., Baarn,	*A Dutch Scholar of the Seventeenth Century.
117	Kever, J. S. H., Amsterdam,	*The Artist.
118	Altmann, S., Amsterdam,	*Petrus Planckus correcting Marine Charts.
119	Altmann, S., Amsterdam,	*The Young Bull (after Potter).
120	Seggern, F. van,	*Landscape in Norway.
121	Hilverdink, E. A., Amsterdam,	*View of the Blanden-Amstel in Amsterdam.
122	Schenkel, J. J., Amsterdam,	*Cathedral in Breda.
123	Groot, J. de, Amsterdam,	*Meditation.
124	Taanman, J., Amsterdam,	*On Duty.
125	Eichelberg, W. H., Amsterdam,	*Winter Landscape in Holland.
126	Nakken, W. C., the Hague,	*Haymaking—Normandy.
127	Kellen, D. v. d., Jr., Amsterdam,	*Secrets.
128	Koster, E., Haarlem,	*View on the River Y, near Amsterdam.
129	Deventer, J. F. van, the Hague,	*Holland Landscape and Cattle.
130	Allebé, Aug., Amsterdam,	*The Nursery.
131	Ebersbach, J. E., Amsterdam,	*Recreation.
132	Hove, B. J. v., the Hague,	*View of a part of St. Hippolytus Church at Delft.
133	Sande Backhuysen, J. v. d., the Hague,	*River Landscape.
134	Schenkel, J. J., Amsterdam,	*The New Church in Amsterdam.
135	Reijntjes, H. E., Amsterdam,	*Twenty by Eighteen.
136	Stroebel, J. A. B., the Hague,	*Dutch Interior.
137	Rochussen, Ch., Rotterdam,	*A Picnic.
138	Rochussen, Ch., Rotterdam,	Near Scheveningen.
139	Roloofs, W., Brussels,	Landscape.
140	Kate, H. F. C. Ten, the Hague,	*Gamblers—seventeenth century.
141	Deventer, W. A., the Hague,	Near Scheveningen.
142	Rochussen, Ch., Rotterdam,	*A Moonlight Excursion.
143	Rochussen, Ch., Rotterdam,	*Reconnoitring.
144	Bliders, J. W., Amsterdam,	*Landscape.
145	Destrée, J. J., the Hague,	*Dutch Meadow.
146	Heemkerk, Van Beest E. v., the Hague,	*Arrival in the Harbor.

NO.	ARTIST.	TITLE.
147	Reijntjes, H. E., Amsterdam,	*Sixty-five by Forty.
148	Bosboom, J., the Hague,	Dutch Church.
149	Constant Rebecque, W. C. de, Loosduinen,	*Harbor of Moerdyk.
150	Kellen, David v. d., Amsterdam,	*No Bad News.
151	Joosten, D. J. H., Haarlem,	*Fruit.
152	Essen, J. C. van, Amsterdam,	*A Moment's Rest.
153	Bocks, M., the Hague,	*Landscape.
154	Riegen, N., Amsterdam,	*Coast Scene in France.
155	Altmann, S., Amsterdam,	*Jan Steen in his Studio.
156	Altmann, S., Amsterdam,	*The Masters of the Kloveniersgild (after F. Hals, 1633).
157	Altmann, S., Amsterdam,	*Masters of the Drapers (after Rembrandt).
158	Altmann, S., Amsterdam,	*Banquet of the Civil Guard (after Van der Helst).
159	Canta, J. A., Rotterdam,	*The Close of a Weary Day.
160	Eversen, A., Amsterdam,	*Street Scene in Winter.

(Annex, Gallery No. 23.)

ENGRAVINGS, PHOTOGRAPHS, CARVINGS.

NO.	ARTIST.	TITLE.
161	Sluijter, H. Dsn, Amsterdam,	*Fourteen engravings, representing Dutch paintings.
162	Cuyppers & Stolzenberg, Sculptors, Roermond,	a The Crucifixion. b The Holy Virgin. c St. Joris.

(Annex, Gallery No. 21.)

NO.	ARTIST.	TITLE.
163	Wollrabe, H. W., the Hague,	Collection of photographs, eight in number.
164	De Jong, G., Groningen,	Three photographs.
165	Tresling & Co., Amsterdam,	Sixteen chromo-lithographs.
166	Molkenboer, W. B. G., Leeuwarden,	Two architectural compositions.
167	Kolkow, F. J. von, Groningen,	Microscopic photographs on glass.
168	Bauer, C. W., Middelburg,	Five photographs.

STATUARY.

NO.	ARTIST.	TITLE.
169	Goossens & Son, Bosch,	Saul on the Road to Damascus (terra-cotta).

# DENMARK.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the office of the Danish Commissioner, Main Building.]

(*Annex Gallery No. 7.*)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Andersen, A., Copenhagen,	*Winter Landscape.
2	Andersen, A., Copenhagen,	*Afternoon in a Danish Beach Forest.
3	Eckardt, C., Copenhagen,	*The Harbor of Genoa.
4	Eckardt, C., Copenhagen,	*The Coast of Spalato, Dalmatia.
5	Hammer, H. J., Copenhagen,	*By the Fountain in Ariccia, Italy.
6	Hammer, W., Copenhagen,	Fruit under an Apple-Tree.
7	Hammer, W., Copenhagen,	*Garden Fruit in a Basket.
8	Melby, W., Copenhagen,	*Midsummer Night, Iceland, Stormy Weather.
9	Mackeprang, A., Copenhagen,	*Fox in the Chicken-Yard.
10	Mackeprang, A., Copenhagen,	*Fox and its Young.
11	Rasmussen, J. E. C., Copenhagen,	*Discovery of America in the Year 1000.
12	Rasmussen, J. E. C., Copenhagen,	*Greenlanders on a Journey.
13	Rasmussen, J. E. C., Copenhagen,	*Danish Fjord.
14	Schovelin, A., Copenhagen,	*Ruins of Heidelberg.
15	Sørensen, C. F., Copenhagen,	*Sunset on the Atlantic—An Old Frigate in a Gale.



# SWEDEN.

[Works of Art marked with an asterisk (\*) are for sale. Information may be obtained at the office of the Swedish Commission, Memorial Hall.]

(*Memorial Hall, Galleries H and K: Annex, Galleries Nos. 11 and 25.*)

## STATUARY.

NO.	ARTIST.	TITLE.
1a	Börjesson, J., Rome,	*The Ladies of the Lake.
1b	Börjesson, J., Rome,	*Psyche.

## WOOD CARVINGS.

NO.	ARTIST.	TITLE.
2	Lundmark, A., Stockholm,	*Carvings in wood.
3	Ostergren, I. P., Westeras,	*Carvings in wood.
4	Wästfelt, Carl C., Kölingsholm,	*Carvings in wood.

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
5a	Adelsköld, C., Stockholm,	*Preparing for Dinner.
5b	Adelsköld, C., Stockholm,	*A Gale on the Coast of Sweden.
6a	Ankarkrona, H., Stockholm,	*Evening Prayer in the Desert.
6b	Ankarkrona, H., Stockholm,	*View from the Boundaries of Algiers and Morocco.
7a	Arborelius, O. P., Stockholm,	*View from Dalarne.
7b	Arborelius, O. P., Stockholm,	*Winter Landscape.
8	Arsenius, John, Stockholm,	*On the Ice.
9	Bennett, C., Baron, Stockholm,	*Royal Palace, Stockholm.
10a	Berg, Albert, Stockholm,	*Coast of Sweden.
10b	Berg, Albert, Stockholm,	*Marine View.
10c	Berg, Albert, Stockholm,	*Winter in the Skjårgard.
10d	Berg, Albert, Stockholm,	*Moonlight.
11a	Bergh, Edward, Stockholm,	*Fishing-Harbor on the Coast of Sweden.
11b	Bergh, Edward, Stockholm,	*Birch Forest.
11c	Bergh, Edward, Stockholm,	Swedish Waterfall.
11d	Bergh, Edward, Stockholm,	Interior View of Pine Forest.
12	Bergman, Miss Elizabeth, Stockholm,	*Landscape in Wermland.
13	Bergstedt, Miss Amanda,	*The Difficult Lesson.
14	Billing, Th., Stockholm,	*Landscape in North Sweden.
15a	Boklund, J. Ch., Stockholm,	*A Marauder.
15b	Boklund, J. Ch., Stockholm,	*Consultation—Gustavus Adolphus and Three Warriors.
16	Brandelius, P., Stockholm,	*Dangerous Excursion.
17a	Börjesson, Miss Agnes, Rome,	*Farewell.
17b	Börjesson, Miss Agnes, Rome,	*A Happy Finding.
18a	Cantsler, H., Stockholm,	*Northern Landscape.
18b	Cantsler, H., Stockholm,	*Reaping in Italy.
19	Cedergren, P. A., Stockholm,	*View of Stockholm.
20	Cederström, G., Baron, Stockholm,	*Dark Moments.
21	Dietrichson, Mrs. M., Christiania,	*The Recovered Document.
22	Ekström, P., Stockholm,	*Summer Evening.
23a	Engström, W. O., Düsseldorf,	*Good-Morning!
23b	Engström, W. O., Düsseldorf,	*Bird of Prey carrying off a Rabbit.
24a	Fagerlin, F. I., Stockholm,	Boys smoking.

NO.	ARTIST.	TITLE.
24 <sup>b</sup>	Fagerlin, F. I., Stockholm,	Jealousy.
25	Fahlgren, C. A., Stockholm,	*Landscape.
26	Hafström, A. G., Düsseldorf,	*A Captured Frenchman.
27 <sup>a</sup>	Hermelin, O., Baron, Stockholm,	*Winter Day in Sweden.
27 <sup>b</sup>	Hermelin, O., Baron, Stockholm,	*Poor People's Graveyard.
27 <sup>c</sup>	Hermelin, O., Baron, Stockholm,	*The First Snow.
27 <sup>d</sup>	Hermelin, O., Baron, Stockholm,	*Fishing-Harbor near Stockholm.
27 <sup>e</sup>	Hermelin, O., Baron, Stockholm,	*Spring, Montmartre, Paris.
27 <sup>f</sup>	Hermelin, O., Baron, Stockholm,	*In a Stockholm Suburb.
27 <sup>g</sup>	Hermelin, O., Baron, Stockholm,	*The Church of St. Pierre, Paris.
27 <sup>h</sup>	Hermelin, O., Baron, Stockholm,	*Returning at Noon.
27 <sup>i</sup>	Hermelin, O., Baron, Stockholm,	*Landscape in Södermanland.
27 <sup>j</sup>	Hermelin, O., Baron, Stockholm,	*Birch Forest.
27 <sup>k</sup>	Hermelin, O., Baron, Stockholm,	*Autumn Day at Djurgården, near Stockholm.
27 <sup>m</sup>	Hermelin, O., Baron, Stockholm,	*Fishing-Place near Stockholm.
27 <sup>n</sup>	Hermelin, O., Baron, Stockholm,	*Sunny Day on Montmartre, Paris.
28	Hersberg, A. G., Stockholm,	Going to Confirmation.
29 <sup>a</sup>	Holm, P. D., Stockholm,	In the Mining Districts of Wermland.
29 <sup>b</sup>	Holm, P. D., Stockholm,	*In the Forest.
30	Holmlund, Miss Josefina, Stockholm,	*Frederika Bremer's First and Last Home.
31 <sup>a</sup>	Holst, J. G. von, Stockholm,	*Sheep on the Pasture.
31 <sup>b</sup>	Holst, J. G. von, Stockholm,	*A Fruitless Effort.
32	Höckert, J., Stockholm,	*Burning of the Royal Palace in Stockholm during the Youth of Charles XII.
33 <sup>a</sup>	Jernberg, Aug., Düsseldorf,	*Market-Day in Düsseldorf.
33 <sup>b</sup>	Jernberg, Aug., Düsseldorf,	The Broken Pipe.
33 <sup>c</sup>	Jernberg, Aug., Düsseldorf,	*Preparations for Meal.
33 <sup>d</sup>	Jernberg, Aug., Düsseldorf,	*Visitors in the Amsterdam Museum, looking at Rembrandt's Night Watch.
34	Jernberg, O., Düsseldorf,	*Swedish Landscape.
35 <sup>a</sup>	Kallenberg, A., Berlin,	*Cattle in Skane.
35 <sup>b</sup>	Kallenberg, A., Berlin,	*Beech Forest.
35 <sup>c</sup>	Kallenberg, A., Berlin,	Farm-House in Sweden.
36	Kjörbel, C. F., Dijon,	Dogs attacking a Fox.
37	Koskull, A. G., Baron, Stockholm,	*Boy and Wolves.
38	Kulle, J., Stockholm,	*Wedding in Skane.
39	Lagerholm, Miss W., Stockholm,	*A Mother's Grief.
40 <sup>a</sup>	Lindgren, Miss Amalia, Stockholm,	Father returned from Market.
40 <sup>b</sup>	Lindgren, Miss Amalia, Stockholm,	Merriment at Home.
40 <sup>c</sup>	Lindgren, Miss Amalia, Stockholm,	Girl with an Orange.
41	Lindman, A., Stockholm,	*Evening on the West Coast of Sweden.
42	Lindström, C., Munich,	Autumn Landscape.
43	Löfgren, Miss Clara, Stockholm,	*Sorrow.
44	Lönnroth, Fr., Borås,	*Norwegian Horses.
45	Malmström, J. Aug., Stockholm,	Dance of Elves.
46 <sup>a</sup>	Nilsson, S., Paris,	*Sigurd Ring, King of Scandinavia and England, burning himself and his Dead Bride.
46 <sup>b</sup>	Nilsson, S., Paris,	*The King of the Children.
46 <sup>c</sup>	Nilsson, S., Paris,	*Brother and Sister.
47 <sup>a</sup>	Nordenberg, B.,	*Dalecarlians put to Flight by a Fire in the Forest.
47 <sup>b</sup>	Nordenberg, B.,	*Wedding in a Swedish Country Church.
47 <sup>c</sup>	Nordenberg, B.,	*Rest in a Säter, Alpine Dairy.
47 <sup>d</sup>	Nordenberg, B.,	The Dead Sheep.
48 <sup>a</sup>	Nordgren, Miss Anna, Paris,	*Italian Girl.
48 <sup>b</sup>	Nordgren, Miss Anna, Paris,	*Genre.
49 <sup>a</sup>	Nordgren, Axel, Düsseldorf,	*View from the Promontory of Kullen in Skane.
49 <sup>b</sup>	Nordgren, Axel, Düsseldorf,	*Coast Scenery.
50	Nordlander, Miss Anna, Stockholm,	*The Favorite Toilet.
51	Palm, G. W.,	*View of Stockholm.

NO.	ARTIST.	TITLE.
52	Perseus, Edw., Stockholm,	*Parisian Maid.
53	Pest, Miss Christine, Stockholm,	The Five Foolish Virgins at the Locked Door.
54a	Ribbing, Miss S., London,	*Young Girl with Grapes.
54b	Ribbing, Miss S., London,	*Girl at the Säter.
54c	Ribbing, Miss S., London,	*The Gardener's Children.
54d	Ribbing, Miss S., London,	*Girl with Eggs.
55	Rosen, C., Count von, Stockholm,	Portrait.
56a	Rydberg, C. F., Stockholm,	Winter Landscape.
56b	Rydberg, C. F., Stockholm,	Spring Landscape.
56c	Rydberg, C. F., Stockholm,	Landscape in Bleking.
57	Salmson, Hugo, Stockholm,	*Odalisque.
58a	Saloman, Geskel, Stockholm,	Maid with an Open Letter.
58b	Saloman, Geskel, Stockholm,	*At the Letter-Box.
58c	Saloman, Geskel, Stockholm,	*Religious Ceremony on the Coast of Algiers.
59a	Schwerin, Baroness Amalia von, Düsseldorf,	*Landscape with Cattle.
59b	Schwerin, Baroness Amalia von, Düsseldorf,	*Landscape with Cattle.
60	Sidwall, Miss Amanda, Paris,	*Mulatto Women.
61	Skanberg, C. E., Paris,	*In the Spring.
62	Svenson, F., Stockholm,	*H. M. Frigate "Vanadies."
63	Södergren, Miss Sofia, Paris,	*French Coast Landscape.
64a	Törna, O., Düsseldorf,	*Pine Forest, Sweden.
64b	Törna, O., Düsseldorf,	*Moonrise, Sweden.
64c	Törna, O., Düsseldorf,	*Birch Forest, Sweden.
65	Wahlberg, H. A. L., Paris,	Moonlight Landscape.
66a	Wahlquist, E., Sigtuna,	*Hunting Party.
66b	Wahlquist, E., Sigtuna,	*Cronborg Castle, at the Oeresund.
66c	Wahlquist, E., Sigtuna,	*Smugglers.
67	Wallander, W., Stockholm,	*Forge in the Forest.
68a	Wallander & Torslow, Stockholm,	*Shepherds making a Fire.
68b	Wallander & Torslow, Stockholm,	*Saturday Night on an Alpine Pasture.
69	Werner, G., Naples,	*The Salamander.
70a	Winge, Mrs. H., Stockholm,	*Church at Rättwik, Dalarna.
70b	Winge, Mrs. H., Stockholm,	*Before Service.
71a	Winge, E., Stockholm,	*Signe burning Herself on witnessing her Lover hanged.
71b	Winge, E., Stockholm,	*Viking Fleet.
72a	Virgin, J. G., Stockholm,	*Letter-Box in Dalarna.
72b	Virgin, J. G., Stockholm,	*On the Meadow.
73	Zetterström, Mrs. M., Paris,	*"Of what is she thinking?"

WATER COLORS.

NO.	ARTIST.	TITLE.
74	Ahrenberg, J., Stockholm,	*City Gate of Rouen.
75a	Blackstadius, J. L., Stockholm,	*Miller's Cottage at Alwastra.
75b	Blackstadius, J. L., Stockholm,	*In Stockholm's Skjærgård.
76a	Gardell, Miss Anna, Stockholm,	*Views from Skane.
76b	Gardell, Miss Anna, Stockholm,	*A Spring Day.
77	Hellquist, H., Paris,	*Genre.
78a	Hägg, J., Stockholm,	*In the River at Stockholm.
78b	Hägg, J., Stockholm,	*Man-of-War.
79	Kylberg, Miss Regina, Stockholm,	*The Halsfors in Norway.
80a	Larson, Miss Virginia, Stockholm,	*Peasant Girl from Dalarna.
80b	Kylberg, Miss Virginia, Stockholm,	*Swedish Landscape.

# NORWAY.

[Works of Art marked with an asterisk (\*) are for sale. Information can be obtained at the office of the Norwegian Commission, Main Building.]

(Memorial Hall, Gallery K.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Gude, Hans, Carlsruhe,	*A Fresh Breeze, Norwegian Coast.
2	Bennetter, J. J., Paris,	*Vikings at Sea.
3	Arbo, P. M., Christiania,	*Day.
4	Bøe, Frantz, Bergen,	*Midnight Sun in Norway.
5	Gude, Hans, Carlsruhe,	*Calm, Christianiafjord.
6	Thaulow, Fritz, Christiania,	*On the Thames.
7	Schanche, Herm. G., Düsseldorf,	*The Folgefond Glacier in Norway.
8	Askevoild, A., Bergen,	*Summer Day at the Mountain Tarn.
9	Thurman, P., Christiania,	*Hardangerfjord.
10	Lerche, Vinc. St., Düsseldorf,	*Studio in a Monastery.
11	Munthe, —, Düsseldorf,	Winter Day in a Forest.
12	Tidemand, A., Düsseldorf,	Peasants in a Wood.

(Memorial Hall, Gallery K.)

## SCULPTURE.

NO.	ARTIST.	TITLE.
12a	Borch, C., Rome,	*Jephthah's Daughter.

(Annex, Gallery No. 7.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
13	Thaulow, Fritz, Christiania,	*View of the Ice Channel, Christianiafjord.
14	Skari, E. O. R., Christiania,	*French Fishermen in the Channel.
15	Jacobsen, S., Düsseldorf,	*Birch Forest.
16	Schive, Jacob, Düsseldorf,	*Norwegian Winter Landscape.
17	Gude, Hans, Carlsruhe,	*View from Dröbak, near Christiania.
18	Sinding, Otto, Munich,	*Fight at a Christmas Feast.
19	Askevoild, A., Bergen,	*Evening on the Mountain Pastures.
20	Möller, Niels B., Düsseldorf,	*Waterfall in Telemarken, Norway.
21	Nielsen, Amaldus, Christiania,	*The Vingeraskfiel, Telemarken.
22	Norman, A., Düsseldorf,	*Landscape from Lærdal, Sognefjord.
23	Baade, Knud, Munich,	*View on the Norwegian Coast.
24	Nicolaysen, L. W., Christiania,	*Norwegian Landscape, from Lake Bandak, in Telemarken.
25	Möller, Niels B., Düsseldorf,	*The Kirkewig near Lysekil, Sweden.
26	Nielsen, Johan, Munich,	*Approaching Thunder-Storm, Lofoten Islands, Norway.
27	Norman, A., Düsseldorf,	*Norwegian Fiord.
28	Bennetter, J. J., Paris,	*Sea-Fight between the Frigate "La Preneuse" and the line-of-battle ship "Jupiter," off Le Banc des Aiguilles, 26th September, 1799.
29	Sinding, Otto, Munich,	*Ruth and Boaz.
30	Wexelsen, Chr., Christiania,	*Scenery from Sörfjorden, Hardanger.
31	Smith-Hald, F., Düsseldorf,	*Winter Day, Bohuslän, Sweden.
32	Möller, Niels B., Düsseldorf,	*Moonlight, Lysekil.

NO.	ARTIST.	TITLE.
33	Jacobsen, S., Düsseldorf,	*Winter Scenery.
34	Müller, Niels B., Düsseldorf,	*From Fiorland, Sognefiord, Norway.
35	Nielsen, Amaldus, Christiania,	*Scenery in the Sognefiord, Norway.
36	Hanno, W. von, Christiania,	*A Street in Brunswick, Germany.
37	Bergslien, Christiania,	*Portrait.
38	Grimelund, I. M., Paris,	*A Summer Morning in the Birch Forest.
39	Bøe, Frantz, Bergen,	*Fruits.
40	Rummelhof, Chr., Arendal,	"Morning"—Faleide in Norfiord.
41	Ulfsten, —, Carlsruhe,	*Moonrise on the Norwegian Coast.
42	Nielsen, Amaldus, Christiania,	*Towards Evening.
43	Lorck, Carl J., Düsseldorf,	*The Elk-Hunters.
44	Anker, Herman, Christiania,	Scenery in Romsdalen.
45	Dahl, Hans, Bergen,	*Natives of Western Norway.
46	Anker, Herman, Christiania,	*Scenery near Loca, in Nordfiord.
47	Bøe, Frantz, Bergen,	*Flowers.
48	Rummelhof, Chr., Arendal,	*After the Rain—View in the Sørfiord.
49	Bergh, Anton, Christiania,	*The Folgefond Glacier in Hardanger.
50	Norman, A., Düsseldorf,	*Scenery in the Romsdalsfiord.
51	Vigdal, A. G., Bergen,	*Waterfall—View in Vos.
52	Lerche, Vinc. St., Düsseldorf,	*Interior of a Monastery.

(Annex, Gallery No. 7.)

SCULPTURE.

NO.	ARTIST.	TITLE.
53	Borch, C., Rome,	*Morning (marble).
54	Borch, C., Rome,	*Evening (marble).
55	Sinding, Stephan, Christiania,	*Hermes (marble).
56	Sinding, Stephan, Christiania,	*Völund (plaster).

## ITALY.

*(Annex, Gallery No. 1.)*

## SCULPTURE.

NO.	ARTIST.	TITLE.
1	Lazzerini, Pietro, Florence,	Brotherly Love (group in marble).
2	Bernasconi, Pietro, Milan,	The Adulteress.
3	Magni, Prof., Milan,	The Sergeant's Family.
4	Becucci Brothers, Florence,	Bacchante.
5	Bottinelli, Antonio, Rome,	Modesty.
6	Pazzi, Prof. Enrico, Florence,	Innocence Playing with Vice.
7	Martegani, Alessandro, Milan,	Moses trampling on the Crown of Pharaoh.
8	Sarrocchi, Prof. Tito, Siena,	The First Capture.
9	Malfatti, Andrea, Milan,	Emancipation.
10	Braga, Enrico, Milan,	Morning.
11	Pazzi, Prof. Enrico, Florence,	Cupid Asleep.
12	Romani, Prof. Carlo, Milan,	A Jealous Sweetheart.
13	Caroni, Prof. Emanuele, Florence,	Cold.
14	Motelli, Metello, Milan,	Prayer.
15	Barcaglia, Donato, Milan,	Fleeting Time.
16	Bazzanti, Peter, & Son, Florence,	Ruth.
17	Caroni, Prof. Emanuele, Florence,	Effects of Cold Water.
18	Sarrocchi, Prof. Tito, Siena,	The Fisher-Boy.
19	Barzaghi, Francesco, Milan,	Blind-Man's-Buff.
20	Barzaghi, Francesco, Milan,	Vanity.
21	Marai, Luigi, Milan,	Cupid Flying.
22	Calvi, Pietro, Milan,	A Courageous Defender of the Feeble.
23	Malfatti, Andrea, Milan,	After the Bath.
24	Trombetta, Milan,	"The First Step."
25	Argenti, Giosuè, Milan,	Dreams of Youth.
26	Zannoni, Ugo, Milan,	The Future Artist.
27	Bernasconi, Pietro, Milan,	A Childish Pleasure.
28	Bernasconi, Pietro, Milan,	A Child's First Misfortune.
29	Ramazzotti, Serafino, Rome,	Spirit of Liberty.
30	Calvi, Pietro, Milan,	The Flower.
31	Becucci Brothers, Florence,	A Gipsy.
32	Pandiani, Innocente, Milan,	Eagle attacking a Turkey.
33	Braga, Enrico, Milan,	Playing Cat's Cradle.
34	Braga, Enrico, Milan,	Beating the Rataplan.
35	Epinay, Cav. Prospero, Rome,	The Youthful Hannibal.
36	Bracony, Guglielmo, Rome,	Vanity.
37	Bergonzoli, Giulio, Milan,	Angelic Love.
38	Lombardo, Giovanni, Rome,	Hen and Chickens.
39	Ragusa, Vincenzo,	Young Bacchus.
40	Marsini, Adelaide, Rome,	Innocence (exhibited in Women's Pavilion).
41	Corti, —, Milan,	Lucifer.
42	Del Panta, Egisto, Florence,	Carnival.
43	Braga, Enrico, Milan,	Cleopatra.
44	Frilli, Antonio, Florence,	Winter.
45	Pandiani, Costantino, Milan,	Love's First Whispers.
46	Frilli, Antonio, Florence,	Spring.
47	Romanelli, Prof. Pasquale, Florence,	Madonna of San Sisto.
48	Miglioretti, Milan,	Death of Abel.
49	Lazzerini, Pietro, Florence,	Innocence.

NO.	ARTIST.	TITLE.
50	Magni, Prof., Milan,	Angelica.
51	Pagani, Luigi, Milan,	Psyche.
52	Pagani, Luigi, Milan,	Lurking Love.
53	Pagani, Luigi, Milan,	Child's First Grief.
54	Pagani, Luigi, Milan,	Leisa San Felice, of Naples.
55	Monari, Alessandro, Ravenna,	Raphael of Urbino.
56	Pessina, Carló, Milan,	The Bird's Nest.
57	Romanelli, Prof. Pasquale, Florence,	Ruth.
58	Tantardini, Antonio, Milan,	Bathing Girl.
59	Bazzanti, Peter, & Son, Florence,	Vase (in green marble).
60	Becucci Brothers, Florence,	Boy with a Dove.
61	Ragusa, Vincenzo, Milan,	Emancipation.
62	Pandiani, Giovanni, Rome,	Caprice (bust).
63	Struzza, Giovanni, Milan,	Alessandro Manzoni (bronze).
64	Prilli, Antonio, Florence,	Autumn.
65	Cambi, Ulisse, Florence,	Moses trampling on the Crown of Pharaoh.
66	Martegani, Alessandro, Milan,	Garibaldi (bust).
67	Luccardi, Prof., Milan,	Innocent Contrast.
68	Biella, Angelo, Milan,	Woman of Pompeii.
69	Funeo, Pietro, Milan,	Maternal Hope.
70	Argenti, Antonio, Milan,	Modesty (bust).
71	Veneroni, Rome,	The Prayer (bust).
72	Becucci Brothers, Florence,	Girl and Dog.
73	Prilli, Antonio, Florence,	Tazza (in green marble).
74	Saul, Giorgio, Florence,	The Last Farewell to her Native Land.
75	Motelli, Metello, Milan,	An Awkward Surprise.
76	Bazzanti, Peter, & Son, Florence,	Washington and his Hatchet.
77	Bazzanti, Peter, & Son, Florence,	Franklin and his Whistle.
78	Bottinelli, Cesare, Milan,	Beatrice Cenci.
79	Dini, Ernesto, Florence,	The Bride.
80	Porcinai, Antonio, Florence,	Innocence.
81	Ferraro, Filippo, Rome,	The Holy Family (bas-relief).
82	Maraini, Adelaide, Rome,	Angels after the Resurrection (bas-relief. In Women's Pavilion).
83	Ramazzotti, Serafino, Rome,	Piety (bas-relief).
84	Maraini, Adelaide, Rome,	Angels before the Resurrection (bas-relief. In Women's Pavilion).
85	Lombardi, Giovanni, Rome,	Flowers (bas-relief).
86	Porcinai, Antonio, Florence,	The Fisher-Girl.
87	Peduzzi, Renato, Milan,	Chimney-piece with a Boy representing Silence.
88	Porcinai, Antonio, Florence,	Girl and Dog.
89	Metti, Raimondo, Florence,	Bust of Dante's Beatrice.
90	Dini, Ernesto, Florence,	Effect of the Wind.

(Annex, Gallery No. 1.)

#### OIL PAINTINGS.

NO.	ARTIST.	TITLE.
91	Tedesco, Prof. Michele, Florence,	The School of Love.
92	Lodigiani, Scipione, Milan,	Galileo before the Tribunal of the Inquisition.
93	Bigara, C. F., Milan,	The Invention of Engraving.
94	Bisi, Prof. Luigi, Milan,	Interior of St. Mark's Church, Venice.
95	Gilli, Alberto, Turin,	Arnoldo da Brescia and Pope Adrian IV.
96	Rubio, Prof. Luigi, Florence,	Magdalene.
97	Bisi, Prof. Luigi, Milan,	Landscape.
98	Trenti, Girolamo, Milan,	Inundation of the River Po, Italy.
99	Romoli, —, Florence,	Copy of Fra Angelico's Incarnation of the Virgin.
100	Fumagalli, Michelangelo,	Columbus conducted back to Spain as a Prisoner.
101	Roi, Pietro, Venice,	Lombardy and Venice, the Two Sister Provinces.
102	Cornienti, Cherubino, Bologna,	Lodovico il Moro visits Leonardo da Vinci while building the Canal of Pavia.
103	Giroux, Ernesto, Rome,	A Cup of Tea.

NO.	ARTIST.	TITLE.
104	Romoli, Florence,	Copies of Fra Angelico's Angels and Virgins.
105	Romoli, Florence,	Copies of Fra Angelico's Angels and Virgins.

(Annex, Gallery No. 1.)

### FLORENTINE MOSAIC WORK.

[The tables and pictures exhibited in the Annex of Memorial Hall, by the following manufacturers and artists of Florentine mosaics, are all made of small pieces of natural stones, inlaid in black marble, porphyry, or other stones.]

#### MOSAIC TABLES.

NO.	ARTIST.	TITLE.
106	Scappini, Giovanni, Florence,	The Table of Science, and various other tables.
107	Civita, Angelo, Florence,	Table inlaid in porphyry, and collection of various tables.
108	Torrini, Giocondo, Florence,	Large round table with bouquet and garland, and various other tables.
109	Bazzanti, Peter, & Son, Florence,	Two large round tables, rococo style, and collection of various tables.
110	Boncinelli, Giov., & Co., Florence,	Collection of various mosaic tables.
111	Betti, Francesco, Florence,	Collection of various tables.
112	Bianchini, Telemaco, Florence,	Collection of mosaic tables.
113	Francolini, Tito, Florence,	Mosaic table with Ganymede and the eagle: collection of mosaic tables.
114	Montelatici Brothers, Florence,	Collection of various mosaic tables.
115	Montelatici, Giuseppe, Florence,	Collection of mosaic tables.
116	Novello, Luigi, Florence,	Collection of mosaic tables.
117	Ugolini, Giov., & Co., Florence,	Collection of mosaic tables.
118	Sandrini, Antonio, Florence,	Collection of mosaic tables.
119	Orlandini, Florence,	Collection of mosaic tables.
120	Gherardi, Goffredo, Florence,	Square table—illustration of Michael Angelo.
121	Brunacci, Pietro, Florence,	Mosaic table.
122	Falcini, Andrea, Florence,	Mosaic tables.
123	Scarselli, Nicola, Florence,	Collection of mosaic tables.
124	Vichi, Ferdinando, Florence,	Collection of mosaic tables.

(Annex, Gallery No. 1.)

#### MOSAIC PICTURES.

NO.	ARTIST.	TITLE.
125	Scarselli, Nicola, Florence,	Still Life.
126	Francolini, Tito, Florence,	The Falconer.
127	Scarselli, Nicola, Florence,	Still Life.
128	Francolini, Tito, Florence,	Portrait of President Lincoln.
129	Bianchini, Telemaco, Florence,	Jacob, Rachel, and Laban.
130	Bianchini, Telemaco, Florence,	Cimabue and Giotto, and four medallions.
131	Bianchini, Telemaco, Florence,	Vase of flowers.
132	Betti, Telemaco, Florence,	A Bouquet.
133	Betti, Telemaco, Florence,	A Bouquet.
134	Francolini, Tito, Florence,	A Roman Peasant Woman.
135	Francolini, Tito, Florence,	Group in the Goldonian Costume.
136	Francolini, Tito, Florence,	Woman of the Roman Campagna.
137	Francolini, Tito, Florence,	The Improvisator.
138	Francolini, Tito, Florence,	A Neapolitan Fisherman playing the Guitar.
139	Francolini, Tito, Florence,	Fowls.
140	Boncinelli, Giov., & Co., Florence,	Still Life.
141	Boncinelli, Giov., & Co., Florence,	Monks in a Cellar.
142	Boncinelli, Giov., & Co., Florence,	A Page leading the Favorite Horse to his Master.
143	Boncinelli, Giov., & Co., Florence,	Scene in a Roman Village.



NO.	ARTIST.	TITLE.
144	Boncinelli, Giov., & Co., Florence,	Still Life.
145	Scappini, Giovanni, Florence,	Roman Costume.
146	Scappini, Giovanni, Florence,	Woman of the Roman Campagna.
147	Scappini, Giovanni, Florence,	Woman of the Roman Campagna.
148	Scappini, Giovanni, Florence,	Interior of the Bargello, Florence.

(Annex, Gallery No. 3.)

### SCULPTURE.

NO.	ARTIST.	TITLE.
149	Bazzanti, Peter, & Son, Florence,	Rebecca at the Well.
150	Peduzzi, Renato, Milan,	Boy and Bird.
151	Barcaglia, Donato, Milan,	The First Visit.
152	Pereda, Raimondo, Milan,	Love's Net.
153	Peduzzi, Renato, Milan,	Boy and Swan.
154	Barcaglia, Donato, Milan,	Butterfly.
155	Peduzzi, Renato, Milan,	Berenice.
156	Caroni, Prof. Emanuele, Florence,	L'Africaine.
157	Guarnerio, Pietro, Milan,	White Rose.
158	Guarnerio, Pietro, Milan,	The Orphan.
159	Cantalamesa, P. Capotti, Rome,	Storm.
160	Cantalamesa, P. Capotti, Rome,	The Mirror of Love.
161	Cantalamesa, P. Capotti, Rome,	Sunshine.
162	Torelli, Lot, Florence,	Eva St. Clair, "Uncle Tom's Cabin."
163	Guarnerio, Pietro, Milan,	Girl at the Bath.
164	Caroni, Prof. Emanuele, Florence,	Effects of Cold Water.
165	Barcaglia, Donato, Milan,	Children Blowing Bubbles.
166	Guarnerio, Pietro, Milan,	Evening.
167	Fantachiotti, Cesare, Florence,	Vanity.
168	Trojani, Giovanni Battista, Florence,	Bas-relief in terra-cotta.
169	Spertini, Giovanni, Milan,	Bas-relief in terra-cotta—The Modern Cain.
170	Trojani, Giov. Batt., Florence,	Bas-relief in terra-cotta—Michel Angelo in San Miniato
172	Argenti, Antonio, Milan,	The Prayer.
173	Bottinelli, Antonio, Rome,	Hope (bust)
175	Bernasconi, Pietro, Milan,	Summer (bust).

(Annex, Gallery No. 3.)

### OIL PAINTINGS.

NO.	ARTIST.	TITLE.
176	Faustini, Modesto, Rome,	A Revolt.
177	Formia, Achille, Milan,	Landscape—A Park.
178	Lessi, Luigi, Rome,	The Conspiracy of the Pazzi.
179	Zuccoli, Luigi, Rome,	The Christian Martyrs under Nero.
180	Fattori, Giovanni, Florence,	A Horse-Market.
181	Della Valle, N., Leghorn,	Storm on the Coast.
182	Accarisi, Lodovico, Florence,	Summer.
183	Accarisi, Lodovico, Florence,	Dancing the Tarantella.
184	Accarisi, Lodovico, Florence,	The Bath.
185	Accarisi, Lodovico, Florence,	Playing on the Tambourine.
186	Quérlau, Luigi, Messina,	Scene in Sicily.
187	Palassi, Gaetano, Bologna,	A Refusal.
188	Fontana, Roberto, Milan,	Evocation of Souls, from "Robert le Diable."
189	Fattori, Giovanni, Florence,	Landscape—At Rest in Summer.
190	Malatesta, Cav. Prof. Narciso, Modena,	Laja, a celebrated Roman artist, painting Julius Cæsar as Apollo.
191	Signorini, Telemaco, Florence,	Olive-Gathering in Tuscany.
192	Zuccoli, Prof. Luigi, Rome,	A Poor Man at the Church-Door.
193	Romagnoli, Angelo, Florence,	Meditation.

NO.	ARTIST.	TITLE.
194	Marchesi, Salvatore, Parma,	Interior of the Choir of the Cathedral of Parma.
195	Cammarano, Michele, Rome,	A Grandmother's Admonition.
196	Zuccoli, Prof. Luigi, Rome,	The Hunter's Rest.
197	Ashton, Federico, Florence,	Woods in Autumn.
198	Solmi, Prof. Valentino, Bologna,	Bizantino d'Aria.
199	Gioli, Francesco, Florence,	The Unlucky Number.
200	Altamura, Prof., Naples,	The Bagpipe-Player.
201	Fattori, Giovanni, Florence,	The Escort.
202	Maldarelli, Federico, Naples,	The Reader.
203	Maldarelli, Federico, Naples,	The Assumption.
204	Fattori, Giovanni, Florence,	Returning from a Military Inspection.
205	Iosio, Prof. Luigi, Rome,	Noon in the Roman Campagna.
206	Bade, Garcia, Rome,	A Portrait.
207	Ridossi, Angelo, Milan,	Resting.
208	Lelli, Giovanni, Milan,	View of Lakes Mergozza and Maggiore.
209	Fattori, Giovanni, Florence,	The Roman Campagna (Oxen).
210	Maldarelli, Prof. Federico, Naples,	A Flower-Girl of Pompeii.
211	Gastaldi, Prof. Andrea, Turin,	"Beware of a False Step."
212	De Santis, Guglielmo, Rome,	A Veiled Figure.
213	Pesenti, Domenico, Florence,	The Ducal Palace of Venice.
214	Ribossi, Angelo, Milan,	"At work yet."
215	Maldarelli, Prof. Federico, Naples,	A Bath in Pompeii.
216	Totti, Prof. Carlo, Milan,	The Vintage.
217	Scifoni, Anatolio, Rome,	Preparation for a Feast in Pompeii.
218	Accarisi, Lodovico, Florence,	Sleeping Child and Dog.
219	Giuliani, Prof. Bartolomeo, Milan,	An Alpine Sketch.

(Annex, Galleries Nos. 2 and 17.)

### SCULPTURE.

NO.	ARTIST.	TITLE.
220	Bottinelli, Antonio, Rome,	Modesty.
221	Dini, Ernesto, Florence,	Beggar Woman.
222	Romanelli, Prof. Pasquale, Florence,	Franklin and his Whistle.
223	Zocchi, Prof. Emilio, Florence,	Benjamin Franklin in his Youth.
224	Romanelli, Prof. Pasquale, Florence,	Washington and his Hatchet.
225	Villa, Federico Gastano, Milan,	Girl Playing with a Bird.
226	Torelli, Lot, Florence,	Timidity.
227	Peduzzi, Renato, Milan,	Boy and Basket.
228	Peduzzi, Renato, Milan,	Dancing Faun.
229	Pandiani, Costantino, Milan,	Moses Trampling on the Crown of Pharaoh.
230	Borghi, Ambrogio, Milan,	Carnival.
231	Pereda, Raimondo, Milan,	A Child's Grief.
232	Barzaghi, Francesco, Milan,	A Young Smoker.
233	Butti, Enrico, Milan,	"Once I was rich."
234	Society of Sculptors, Florence,	The Young Soldier.
235	Society of Sculptors, Florence,	A Rose's Perfume.
236	Ramaschiello, Vincenzo, Rome,	Cupid on the Lookout.
237	Caroni, Prof. Emanuele, Florence,	Bust of a Roman Girl.
238	Society of Sculptors, Florence,	Iole and Ruggiero.
239	Caroni, Prof. Emanuele, Florence,	Winter.
240	Torelli, Lot, Florence,	A Good Housekeeper.
241	Del Panta, Egisto,	Goldoni's Boyhood.
242	Tantardini, Prof. Antonio, Milan,	A Wounded Friend.
243	Malfatti, Andrea, Milan,	The Discarded.
244	Barcaglia, Denato, Milan,	The First Friend.
245	Pereda, Raimondo, Milan,	Delight.

NO.	ARTIST.	TITLE.
246	Bazzanti, Peter, & Son, Florence,	Dancing Bacchante.
247	Rossi, Prof. Alessandro, Milan,	Hope.
248	Borghi, Ambrogio, Milan,	The Mother's Treasure.
249	Rossetti, Antonio, Rome,	Ophelia.
250	Zocchi, Prof. Emilio, Florence,	Michael Angelo sculpturing the head of a Faun.
251	Gori, Lorenzo, Florence,	After the Bath.
252	Dini, Ernesto, Florence,	Dante and Beatrice—Childhood.
253	Magni, Prof. Enrico, Milan,	The Reader.
254	Vela, Prof. Vincenzio, Milan,	The First Sorrow.
255	Rossi, Prof. Alessandro, Milan,	A Free Church in a Free State.

(Annex, Galleries Nos. 2 and 17.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
256	Mancini, Carlo, Milan,	A Dutch Farm.
257	Michis, Pietro, Milan,	During the Sermon.
258	Accarisi, Lodovico, Florence,	Meditation.
259	De Sanctis, Guglielmo, Rome,	Waiting for her Lover.
260	Formis, Augusto, Turin,	The Refusal.
261	Gelati, Prof. Lorenzo, Florence,	View of Florence.
262	Solmi, Prof., Bologna,	Porta del Popolo, Rome.
263	Lombardi, Giovanni, Rome,	Flowers.
264	Mancinelli, Prof. Gustavo, Naples,	The Harpist.
265	Meucci, Michele, Florence,	Still Life (two pictures).
266	Bartasago, Enrico, Milan,	Noon in the Country.
267	Moia, ———, Venice,	Rear of Caen Cathedral.
268	Accarisi, Lodovico, Florence,	Ideal Portrait.
269	Dies, Cesare, Rome,	Interior of St. Peter's, Rome.
270	Ashton, Federico, Rome,	Landscape.
271	Della Libera, Giov. Batt., Venice,	A Sleeping Gipsy.
272	Sommaruga, Napoleone, Milan,	Landscape, with Boys Bathing.
273	Bianchi, Luigi, Milan,	The Nettunese Bride.
274	Accarisi, Lodovico, Florence,	A Beggar Monk.
275	Pitarra, Cav. Carlo, Rome,	At the Foot of the Alps.
276	Faccioli, Raffaello, Bologna,	Two o'clock at the Procurator's Office in Venice.
277	Picchi, Andrea, Florence,	Frame in ebony, Florentine style (sixteenth century), with picture.
278	Bianchi, Cav. Luigi,	A Birthday in the Eighteenth Century.
279	Formis, Achille, Milan,	The Alpine Tourists.
280	Gioli, Francesco, Florence,	Working in the Campagna of Pisa.
281	Sommaruga, Napoleone, Naples,	Porch of the Church of San Ambrogio, Milan.
282	Stanghi, Carolina, Florence,	Fruit (copy).
283	Bersini, Ferdinando, Rome,	A Mass in the Country.
284	Signorini, Telemaco, Florence,	The Convent of Vallombrosa, in Tuscany.
285	Sommaruga, Napoleone, Naples,	Interior of St. Alexander's Church.
286	Signorini, Telemaco, Florence,	Scottish Covenanters.
287	Bompiani, Roberto, Rome,	Pompeian Boy Flute-Player.
288	Bompiani, Roberto, Rome,	The Anniversary.
289	Picchi, Andrea, Florence,	Ebony frame, Florentine style (sixteenth century), with picture.
290	Picchi, Andrea, Florence,	Ebony frame, Florentine style (sixteenth century).
291	Michis, Cataneo, Milan,	Angelic Love.
292	Ashton, Prof. Luigi, Milan,	Animals.
293	Radice, Cav. Pasquale, Naples,	View of Mount Etna, Sicily.
294	Bompiani, Roberto, Rome,	Scene in a Neapolitan Village.
295	Fattori, Giovanni, Florence,	Arrival of the Mail in Camp.
296	Accarisi, Lodovico, Florence,	Spring.
297	Meucci, Michele, Florence,	Still Life.
298	Cicconi, Prof. Ferdinando, Ancona,	Columbus at the Convent of Palos.

NO.	ARTIST.	TITLE.
299	Busio, Prof. Luigi, Florence,	Neapolitan Fishermen.
300	Trenti, Girolamo, Milan,	Landscape in the Province of Mantua.
301	Accarisi, Lodovico, Florence,	A Moorish portrait.
302	Busio, Prof. Luigi, Florence,	The Flight into Egypt.
303	Strutt, A. T., Rome,	Working in the Roman Campagna.
304	Picchi, Andrea, Florence,	Ebony frame (style, sixteenth century), with picture.
305	Della Libera, Giov. Batt., Venice,	The Council of Ten in Venice.
306	Mazza, Salvatore, Milan,	Roman Woman.
307	Trezzini, Angelo, Milan,	Returning from Church.
308	Trenti, Girolamo, Milan,	Group of Trees.
309	Accarisi, Lodovico, Florence,	Milanese portrait.
310	Bryner, Giovanni, Florence,	The Staubbach Cascade in Switzerland.
311	Michis, Pietro, Milan,	A Happy Morning.
312	Solmi, Valentino, Bologna,	Mosque of Soliman, Constantinople.
313	Accarisi, Lodovico, Florence,	Girl and Dog.
314	Mazza, Salvatore, Milan,	Landscape (group of horses.)
315	Jotti, Prof. Carlo, Milan,	Approaching Storm.
316	Smargiassi, Giovanni, Naples,	View of Naples.
317	Steffani, Luigi, Milan,	Sheep.
318	Burlando, Prof. Leop., Milan,	Borromeo's Cliff.
319	Accarisi, Lodovico, Florence,	The Coming Storm.
320	Cicconi, Ferdinando, Ancona,	Columbus in Prison.
321	Cassiali, Annibale, Florence,	The Studio of Leonardo da Vinci.
322	Accarisi, Lodovico, Florence,	Shepherds in the Roman Campagna.
323	Candidi, Alfredo, Florence,	The Bagpipe-Player.
324	Scifoni, Anatolio, Rome,	Offerings to the Laræ.
325	Mazza, Salvatore, Milan,	Landscape.

(Annex, Gallery No. 4.)

## SCULPTURE.

NO.	ARTIST.	TITLE.
326	Tantardini, Prof. Antonio, Milan,	Girl Reading.
327	Prilli, Antonio, Florence,	Dancing Boys.
328	Barzaghi, Milan,	Phryne before the Judges.
329	Guarnerio, Pietro, Milan,	The Last Days of Pompeii.
330	Cambi, Prof. Ulisse, Florence,	At the Carnival.
331	Guarnerio, Pietro, Milan,	Raphael of Urbino in his Youth.
332	Guarnerio, Pietro, Milan,	The Forced Prayer.
333	Guarnerio, Pietro, Milan,	Vanity.
334	Caroni, Prof. Emanuele, Florence,	Birth of Love.
335	Caroni, Prof. Emanuele, Florence,	Love's Messenger.
336	Guarnerio, Pietro, Milan,	The Rebuke.
337	Caroni, Prof. Emanuele, Florence,	A Christmas-Present.
338	Caroni, Prof. Emanuele, Florence,	Youth as a Butterfly.
339	Caroni, Prof. Emanuele, Florence,	Recreation at School.
340	Barcaglia, Donato, Milan,	Love is Blind.
341	Cambi, Prof. Ulisse, Florence,	Cupid Begging.
342	Bottinelli, Antonio, Rome,	Vanity.
343	Pereda, Milan,	The Orphans.
344	Barzaghi, Francesco, Milan,	The Finding of Moses.
345	Pereda, Raimondo, Milan,	Pretence and Sympathy.
346	Zocchi, Prof. Emilio, Florence,	Bacchus.
347	Monari, Prof. Carlo, Bologna,	Ophelia.
348	Bottinelli, Antonio, Rome,	Bust—Winter.
349	Bottinelli, Antonio, Rome,	Bust—Modesty.
350	Bottinelli, Antonio, Rome,	Summer (bust).
351	Argenti, Giosué, Milan,	Hope (bust).
352	Bottinelli, Antonio, Rome,	Spring (bust).
353	Bottinelli, Antonio, Rome,	Autumn (bust).
354	Argenti, Giosué, Milan,	Tamar (bust).

NO.	ARTIST.	TITLE.
355	Formis, Cav. Achille, Milan,	A Lunch.
356	Lelli, Giovanni Batt., Milan,	The Sesia River at Monte Rosa.
357	Di Chierico, —, Naples,	Buoso da Duero, the Betrayer of King Manfred of Sicily, dying from Starvation at the Door of a Convent.
358	Picchi, Andrea, Florence,	Four pictures (with ebony frame, inlaid with stones—style sixteenth century).
359	Valaperta, Francesco, Milan,	The Beheading of St. John.
360	Ardi, Bartolomeo, Turin,	The Rest in the Fenestrelles Valley, Piedmont.
361	Lelli, Giovanni Battista, Milan,	Fishermen's Island.
362	Canella, Carlo, Milan,	Piazza San Marco, Venice.
363	Burdin, Margherita, Rome,	Still Life.
364	Burdin, Margherita, Rome,	Still Life.
365	Accarisi, Lodovico, Florence,	A Pilgrim.
366	Accarisi, Lodovico, Florence,	A Pilgrim.
367	Accarisi, Lodovico, Florence,	Monk and Farmer.
368	Sasso, Antonio, & Son, Florence,	Titian's Flora (copy).
369	Sasso, Antonio, & Son, Florence,	Beatrice Cenci.
370	Sasso, Antonio, & Son, Florence,	Madonna on the Throne (copy).
371	Sasso, Antonio, & Son, Florence,	Holy Family (copy).
372	Sasso, Antonio, & Son, Florence,	Carlo Dolci's Magdalene (copy).
373	Accarisi, Lodovico, Florence,	Girl Bathing.
374	Accarisi, Lodovico, Florence,	Madame Vigée le Brun (copy).
375	Accarisi, Lodovico, Florence,	Rembrandt (copy).
376	Accarisi, Lodovico, Florence,	A Sweet Look.
377	Accarisi, Lodovico, Florence,	Titian's Bella (copy).
378	Sasso, Antonio, & Son, Florence,	Salvator Rosa's celebrated marine view (copy).
379	Sasso, Antonio, & Son, Florence,	Landscape.
380	Sasso, Antonio, & Son, Florence,	Saint John in the Presence of Herod.
381	Marucelli, Pietro, Milan,	View near Naples.
382	Sasso, Antonio, & Son, Florence,	Raphael's Madonna.
383	Sasso, Antonio, & Son, Florence,	Perugino's Madonna.
384	Accarisi, Lodovico, Florence,	Fruit.
385	Radici, Pasquale, Naples,	A Neapolitan.
386	Romoli, Prof. Luigi, Florence,	Fra Angelico's Angels.
387	Accarisi, Lodovico, Florence,	Neapolitan Family.
388	Accarisi, Lodovico, Florence,	Beatrice Cenci (copy of Guido Reni).
389	Catena, Vincenzo,	Portrait of a Cardinal.
390	Catena, Vincenzo,	A Portrait.
391	Catena, Vincenzo,	A Portrait.
392	Sasso, Antonio, & Son, Florence,	Raphael's Fornarina.
393	Accarisi, Lodovico, Florence,	Volterrano's Sleeping Cupid.
394	Accarisi, Lodovico, Florence,	Vanity (Venetian school).
395	Accarisi, Lodovico, Florence,	Beginning of a Storm.
396	Accarisi, Lodovico, Florence,	Raphael's Madonna (copy).
397	Accarisi, Lodovico, Florence,	A Sweet Look.
398	Accarisi, Lodovico, Florence,	Correggio's Madonna and Child.
399	Accarisi, Lodovico, Florence,	Beginning of a Storm.
400	Accarisi, Lodovico, Florence,	Roman Shepherdess.
401	Accarisi, Lodovico, Florence,	The Thorn.
402	Accarisi, Lodovico, Florence,	Domenichino's Sibylla.
403	Bourdan, Marquinta, Naples,	A Roman Poultry-Dealer.

(Annex, Gallery No. 19.)

NO.	ARTIST.	TITLE.
405	D'Amore, Palermo,	The Night of the 11th of October, 1498.
406	Spertini, Giovanni, Milan,	Love's Messenger.
407	(Unknown),	Boy Gathering Grapes.
408	Barzaghi, Francesco, Milan,	The First Ride.
409	Braga, Enrico, Milan,	A Faun.
410	Zocchi, of Emilio, Florence,	Columbus in his Youth.
411	Barzaghi, Francesco, Milan,	Silvia.

NO.	ARTIST.	TITLE.
412	Braga, Enrico, Milan,	Boy's Playfellow.
413	Braga, Enrico, Milan,	A Mountebank.

(Memorial Hall, Gallery A.)

## SCULPTURE.

NO.	ARTIST.	TITLE.
414	Buzzi Giberto, Cav. Luigi, Milan,	After School.
415	Poszi, Egidio, Milan,	The Youth of Michael Angelo.
416	Braga, E., Milan,	Modesty.
417	Galli, Rizzardo, Milan,	Beggars.
418	Buzzi Giberto, Cav. Luigi, Milan,	First Sensation of Love.
419	Buzzi Giberto, Cav. Luigi, Milan,	A Riddle.
420	(Unknown),	The Florist.
421	Cannone & Gargiulo, Naples,	Venus (bronze).
422	Tempa, Quirino, Milan,	The Little Teacher.
423	Dal Negro, Pietro, Milan,	Cain and Abel.
424	Albacini, Achille, Rome,	Roman Costume.
425	Tantardini, Cav. A., Milan,	The First Sorrow.
426	Cocchio, Luigi, Milan,	Spring.
427	Buzzi Giberto, Cav. Luigi, Milan,	The World.
428	Braga, E., Milan,	Peasant Girl (Lombard costume).
429	Zannoni, Cav. Ugo, Milan,	A Wrong Blow.
430	Zannoni, Cav. Ugo, Milan,	Affection and Envy.
431	Gentile, Chieti,	And to-morrow?
432	Zannoni, Cav. Ugo, Milan,	Study and Work.
433	Croff, Giuseppe, Milan,	Odalisque.
434	Romani, Francesco, Milan,	The Coquette.
435	Pandiani, Signora Adelaide Maraini, Milan,	Spring. (In the Women's Pavilion.)
436	Guarnerio, Pietro, Milan,	Arms in the act of shooting the Virgin Camilla: (Virgil, Æneid, book xi.)
437	Guarnerio, Pietro, Milan,	George Washington (model expressly executed for the Centennial Exhibition).
438	Villa, J. G., Milan,	Simplicity.
439	(Unknown),	The Reader.
440	Braga, E., Milan,	Bashfulness.
441	Buzzi Giberto, Cav. Luigi, Milan,	Dante.
442	Biganzoli, Filippo, Milan,	Alessandro Manzoni (Italian poet and novelist).
443	Galli, Rizzardo, Milan,	Resignation.
444	Galli, Rizzardo, Milan,	"Shall I see him again?"
445	Croff, Giuseppe, Milan,	Ernest and Salamace.
446	Galli, Rizzardo, Milan,	Youthful Amusement.
447	Marai, Luigi, Milan,	A Summer Day.
448	Biganzoli, Filippo, Milan,	Alexander von Humboldt.
449	(Unknown),	Garibaldi.
450	Fumei, Pietro, Milan,	Meditation.
451	Galli, Rizzardo, Milan,	A Veiled Girl.
452	Buoninsegna, Milan,	The Slave.
453	Galli, Rizzardo, Milan,	The Bride.
454	Salomi, Florence,	The Daughter of Zion Weeping over Jerusalem.
455	Rosetti, Antonio, Rome,	The Railway (bronze statue).
456	Rosetti, Antonio, Rome,	A Marble Fountain (Bacchus).
457	Rosetti, Antonio, Rome,	The Telegraph (bronze statue).

(Gallery N.)

## SCULPTURE.

NO.	ARTIST.	TITLE.
458	Bottinelli, Ant., Rome,	Hope.
459	Matteucci, Luigi, Milan,	Gaping.

NO.	ARTIST.	TITLE.
460	Pessina, Carlo, Messina,	Costume of Marie Stuart.
461	Casetti, Turin,	Devotion.
462	Argenti, Giosuè, Milan,	The Florist.
463	Corbellini, Quintilio, Milan,	Lucio.
464	Zocchi, E., Florence,	Youth of Michael Angelo.
465	Radius, Eugenio, Milan,	Faith.
466	Buzzi Giberto, Cav. Luigi, Milan,	Inspiration.
467	Trojani, G. B., Milan,	The Sailor-Boy.
468	Argenti, Giosuè, Milan,	Modesty.
469	Braga, E., Milan,	Wearied with Play.
470	Veneroni, Milan,	Modesty.
471	Braga, E., Milan,	Bashfulness.
472	Trojani, G. B., Milan,	After Recreation.
473	Galli, Rizzardo, Milan,	Columbus.
474	Cambi, Uliasse, Florence,	Eve, with Cain and Abel.
475	Argenti, Giosuè, Milan,	Sleep.
476	Conti, Alessandro, Milan,	Revery.
477	Lucca, Flaminio, Milan,	Modesty.
478	Luca, Flaminio, Milan,	Candor.
479	Galli, Rizzardo, Milan,	The Little Savoyard.
480	Galli, Rizzardo, Milan,	The Devotee.
481	Calvi, P., Milan,	Michael Angelo.
482	Galli, Rizzardo, Milan,	St. John the Baptist.
483	Galli, Rizzardo, Milan,	Faith.
484	Gallandt, L. A., Rome,	Washington (presented to the Centennial Celebration of American Independence, by the artist).
485	Galli, Rizzardo, Milan,	Hope.
486	Spertini, Giovanni, Milan,	General Garibaldi.
487	Bietta, Angelo, Milan,	The Reader.
488	Ramazzotti, Serafino, Rome,	Rome.
489	Argenti, Antonio, Milan,	Prayer.
490	Argenti, Angelo, Milan,	Devotion.
491	Dies, Emilio, Rome,	Innocence.
492	Spertini, Giovanni, Milan,	Giuseppe Mazzini.
493	Pessina, Carlo, Milan,	Youth.
494	Radius, Eugenio, Milan,	The Afflicted.
495	Pessina, Carlo, Milan,	The Prayer.
496	Tantardini, Prof. Antonio, Milan,	The Pompeian Woman.
497	Radius, Eugenio, Milan,	"Ecce Homo."
498	Trojani, G. B., Rome,	Sir Isaac Newton.
499	Spertani, Giovanni,	Giuseppe Dassi, Vice-President of the Italian Centennial Commission.
500	Brodski, Rome,	Veiled Girl.

### MOSAIC WORK.

NO.	ARTIST.	TITLE.
501	Roccheggiani, Rome,	Collection of mosaics.
502	Moglià, Augusto, Rome,	Ruins of the Temple of Pæstum, Naples.
503	Moglià, Augusto, Rome,	The same (smaller).
504	Moglià, Augusto, Rome,	The Roman Forum, viewed from the Romagna.
505	Moglià, Augusto, Rome,	The Roman Forum (an antique).
506	Moglià, Augusto, Rome,	The Colosseum.
507	Moglià, Augusto, Rome,	Black antique table, inlaid in rococo style, with nine of the principal views of Rome, the centre piece being a view of the piazza of St. Peter's; surrounding this is a circle of four large views, viz.: The Tomb of Cecilia Metella; The Ponte Lucano, or Lucan Bridge, on the road to Tivoli; The Forum; and the Colosseum. An outer circle consists of four minor views, viz.: Temple of the Sibyl, at Tivoli; Temple of Vesta, at Rome; The Pyramid of Caius Cestius, and the Pantheon—the whole forming a work which took a premium at Rome in 1870.

NO.	ARTIST.	TITLE.
508	Moglia, Augusto, Rome,	Black antique table, carved and inlaid with campanelle (little flowers of the Campagna), birds, butterflies, bees, scrolls, etc.
509	Moglia, Augusto, Rome,	Picture, the Piazza of St. Peter's (took a prize medal at the Roman Exposition, 1870).
510	Moglia, Augusto, Rome,	The Bridge and Castle of St. Angelo (companion picture to No. 509).
511	Moglia, Augusto, Rome,	View of the Fountain of Trevi, Rome.
512	Moglia, Augusto, Rome,	The Campidoglio (companion picture to No. 511).
513	Roccheggiani, Rome,	Collection of mosaics.
514	Roccheggiani, Rome,	Bouquet (in mosaic).
515	Roccheggiani, Rome,	Bouquet (in mosaic).
516	Gallandt, L. A., Rome,	Head of Washington (presented by the artist to the city of Philadelphia).
517	Gallandt, L. A., Rome,	The Forum (in mosaic).
518	Gallandt, L. A. Rome,	Madonna and Child (after Raphael).

## THE CASTELLANI ANTIQUITIES.

*(Memorial Hall, Gallery U.)*

EXHIBITOR.	TITLE.	OWNER.
Castellani, A., Rome,	Marbles and Bronzes.	A. Castellani.

*(Memorial Hall, Gallery V.)*

Castellani, A., Rome,	Majolica.	A. Castellani.
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*(Memorial Hall, Gallery W.)*

Castellani, A., Rome,	Personal Ornaments.	A. Castellani.
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## COLLECTION LOANED BY POPE PIUS IX.

*(Memorial Hall, Gallery K.)*

NO.	ARTIST.	TITLE.	OWNER.
1	(Unknown),	Flowers in mosaic.	Pope Pius IX.
2	(Unknown),	Mosaic of a Madonna after Sassoferrato.	Pope Pius IX.
3	(Unknown),	Mosaic of Raphael's Madonna del Seggiola.	Pope Pius IX.
4	(Unknown),	Tapestry — The Martyrdom of St. Agnes.	Pope Pius IX.

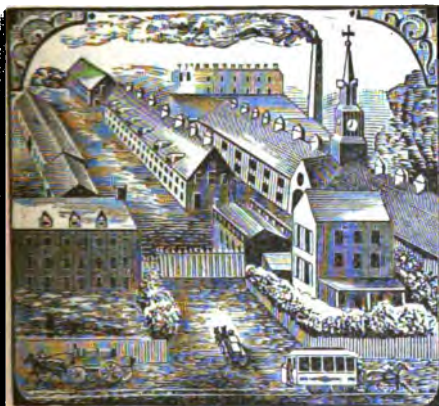


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WEEK ENDING	COPIES PRINTED.	WEEK ENDING	COPIES PRINTED.
March 20.....	849,382	September 18.....	860,358
27.....	845,802	25.....	858,778
April 8.....	857,956	October 2.....	863,935
10.....	863,556	9.....	870,820
17.....	855,076	16.....	878,082
24.....	858,270	23.....	874,626
May 1.....	869,542	30.....	876,160
8.....	867,550	November 6.....	908,580
15.....	877,450	13.....	852,372
22.....	874,948	20.....	847,815
29.....	866,276	27.....	836,248
June 5.....	878,782	December 4.....	845,378
12.....	869,769	11.....	1,042,716
19.....	880,348	18.....	956,294
26.....	883,846	25.....	933,864
July 8.....	898,862	January 1.....	933,987
10.....	867,574	8.....	952,202
17.....	877,400	15.....	953,019
24.....	876,282	22.....	969,911
31.....	874,216	29.....	967,850
August 7.....	865,558	February 5.....	993,030
14.....	875,982	12.....	1,024,647
21.....	880,488	19.....	1,027,209
28.....	870,502	26.....	1,014,766
September 4.....	872,211	March 4.....	1,014,993
11.....	860,755	11.....	1,028,951
TOTAL.....		46,799,769	

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## BRAZIL.

*(Annex, Gallery No. 27.)*

## SCULPTURE.

NO.	ARTIST.	TITLE.
1	Bernardelli, Rio de Janeiro,	Recollection of the Tribe (plaster).

*(Annex, Gallery No. 29.)*

## SCULPTURE.

NO.	ARTIST.	TITLE.
2	Chaves, Pinheiro, Rio de Janeiro,	The Actor Joao Gaetano as Oscar (plaster).
3	Bernardelli, Rio de Janeiro,	The Indian Peeping (plaster).
4	Almeida, Reis, Rio de Janeiro,	The Crime (plaster).
5	Almeida, Reis, Rio de Janeiro,	The Bishop of Chrysopolis (plaster).

*(Annex, Gallery No. 29.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
6	Lima, Victor Meirelles de, Rio de Janeiro,	The Naval Battle of Riachuelo (Paraguayan War).
7	Lima, Victor Meirelles de, Rio de Janeiro,	The Brazilian Iron-clad Fleet passing by Humaita (Paraguayan War.)
8	Lima, Victor Meirelles de, Rio de Janeiro,	The First Mass in Brazil.
9	Figueredo, Pedro Americo de, Rio de Janeiro,	Brazilian Army crossing Passo da Patria, led by Marshal Ozario (Paraguayan War).
10	Figueredo, Pedro Americo de, Rio de Janeiro,	Defence of the Island of Cabrita (Paraguayan War).
11	Henschell, Rio de Janeiro,	Portrait of the Emperor of Brazil.
12	De Martino, Rio de Janeiro,	Moonlight in the Harbor of Montevideo.
13	(Unknown),	View of St. Peter's Cathedral in Rome Exhibited by the Academy of Fine Arts, Rio de Janeiro.
14	(Unknown),	Charity. Exhibited by the Academy of Fine Arts, Rio de Janeiro.
15	(Unknown),	Sunset on the Sea-Shore. Exhibited by H.R.H. the Count d'Eu.

*(Annex, Gallery No. 29.)*

## WATER COLORS.

NO.	ARTIST.	TITLE.
16	Pacheco, I. Insley, Rio de Janeiro,	Three paintings, representing views of the interior of Brazil.
17	Pacheco, I. Insley, Rio de Janeiro,	Aquarelles, representing views of the interior of Brazil.
18	Rocha, Antonio da, Rio de Janeiro,	The Holy Mother (after Guido Reni).

*(Annex, Gallery No. 27.)*

## LITHOGRAPHS, CRAYONS, ETC.

NO.	ARTIST.	TITLE.
19	Almeida, Marianno de, Rio de Janeiro,	Sketches with pen and ink.
20	Pacheco, I. Insley, Rio de Janeiro,	Two landscapes (crayons).
21	Leutsinger & Sons, Rio de Janeiro,	Photo-lithographs, representing panoramas of the Bay of Rio de Janeiro.
22	Damasceno, J. dos Passos, Rio de Janeiro,	Pen-and-ink drawing—Dom Pedro II

# ARGENTINE REPUBLIC.

(Annex, Gallery No. 27.)

[Works of Art marked with an asterisk (\*) are for sale. For information apply at the Office of the Argentine Republic, Main Building.]

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Petrassini, Buenos Ayres,	*Fruit.
2	Gattinoni, Carlos, Buenos Ayres,	*Child's Head.
3	Gattinoni, Carlos, Buenos Ayres,	*Old Man's Head.
4	Marroig, G., Entre Rios,	*At the Fountain.
5	Diaz, Josefa, Santa Fé,	*Argentine Gaucho.
6	Castillo, B. del, Buenos Ayres,	*Peace.
7	Boneo, M. L., Buenos Ayres,	Native Scene.
8	Diaz, Josefa, Santa Fé,	*The Chaco Indian.
9	Charton, E., Buenos Ayres,	Valparaiso, Chili.
10	Gattinoni, Carlos, Buenos Ayres,	*Rustic Court.
11	Gattinoni, Carlos, Buenos Ayres,	*A Difficult Answer.
12	Charton, E., Buenos Ayres,	Chilian Farmer.
13	Diaz, Josefa, Santa Fé,	*Fruit.
14	Charton, E., Buenos Ayres,	View of Santiago, Chili.
15	Boneo, M. L., Buenos Ayres,	Native Scene.
16	Pasquinelli, A., Santa Fé,	*The Watering-Place.
17	Marroig, G., Entre Rios,	*The Beggar Monk.
18	Gattinoni, Carlos, Buenos Ayres,	*Giovanni Boccaccio visiting Beatrice Alighieri, daughter of Dante, in the Monastery of Ravenna.
19	Barros, Alvaro, Buenos Ayres,	The Murder of Dr. Varela.
20	Chiamas, Epaminonda, Buenos Ayres,	*At the Camp Store.
21	Charton, E., Buenos Ayres,	City and Harbor of Panama.
22	Charton, E., Buenos Ayres,	General View of Guayaquil.
23	Boneo, M. L., Buenos Ayres,	Native Scene.
24	Castillo, B. del, Buenos Ayres,	*Fruit and Flowers.
25	Gattinoni, Carlos, Buenos Ayres,	*Boy after a Bath.
26	Boneo, M. L., Buenos Ayres,	Native Scene.
27	Castillo, B. del, Buenos Ayres,	*Burning of the Steam-Packet America on her Voyage from Buenos Ayres to Montevideo
28	Diaz, Josefa, Santa Fé,	*Black Servant.
29	Charton, E., Buenos Ayres,	Public Square in Córdoba.
30	Muratory, José, Buenos Ayres,	Naval Battle.
31	Muratory, José, Buenos Ayres,	Naval Battle.
32	Muratory, José, Buenos Ayres,	Naval Battle.
33	Muratory, José, Buenos Ayres,	Naval Battle.
34	Calzadilla, S., Santiago,	*The Washerwoman going to her Work.

## MEXICO.

[Information concerning the sale of Works of Art may be obtained at the office of the Mexican Commission, Main Building.]

(Annex, Gallery No. 9.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
1	Sagredo, Ramon,	The Castle of Emaus.	The National Academy.
2	Hernandez, Ignacio,	Portrait of Mina, one of the heroes of Mexican Independence.	The National Academy.
3	Ramirez, Joaquin,	Portrait of Hidalgo, father of Mexican Independence.	The National Academy.
4	Pina, Salomé,	Saint Charles.	The National Academy.
5	Ramirez, Joaquin,	Noah's Ark.	The National Academy.
6	Monroy, Felix,	The Death of Atala.	The National Academy.
7	Velasco, José Maria,	The Valley of Mexico.	Artist.
8	Figuerola, Gregorio,	The Death of Abel.	The National Academy.
9	Velasco, José Maria,	Wood of Chapultepec.	The National Academy.
10	Jimenez, José,	Interior of the Convent of Loreto, City of Mexico.	The National Academy.
11	Rebull, Santiago,	The Death of Marat.	Artist.
12	Flores, Rafael,	Dante.	The National Academy.
13	Dumaine, Gregorio,	The Road of Chapultepec.	The National Academy.
14	Gargollo, Julio,	The Morning Paper.	Artist.
15	Coto, Luis,	The Town of Guadalupe Hidalgo.	The National Academy.
16	Gonzalez, J.,	Evil Presentiments.	The National Academy.
17	Cordero, Juan,	Columbus before the Court of Ferdinand and Isabella.	The National Academy.
18	Ocaranza, Manuel,	The Withered Flower.	The National Academy.
19	Manchola, Juan,	Saint Peter Restoring a Child.	The National Academy.
20	Obregon, José,	Giotto and Cimabue.	The National Academy.
21	Clavé, Pelegrin,	Isabel of Portugal.	The National Academy.
22	Cordero, Juan,	The Family of the Artist Cordero.	Artist.
23	Gutierrez, Felipe,	Saint Sebastian.	The National Academy.
24	Parra, Felix,	Galileo.	The National Academy.
25	Vega, Federico de la,	The Fall of Satan.	The National Academy.
26	Gutierrez, Rodrigo,	The Fisher-Boy.	The National Academy.
27	Ferrando, Salvador,	Jacob Anointing a Rock.	The National Academy.
28	Montenegro, Guadalupe,	The Young Sketcher.	The National Academy.
29	Escudero y Espronceda, José,	Portrait of Benito Juarez, late President of Mexico.	Artist.
30	Enriquez, Nicolas,	Apparition of the Holy Virgin—seventeenth century.	The National Academy.
31	Villalpando, Carlos de,	Interior of the Convent of Bethlehem—seventeenth century.	The National Academy.
32	Caballero, N.,	Holy Spring in Guadalupe—seventeenth century.	The National Academy.
33	Castro, José Antonio,	Spain (allegorical painting).	The National Academy.
34	Paes, José,	Saint Rosalia.	The National Academy.
35	Rodriguez, Antonio,	Saint Thomas of Villanueva.	The National Academy.
36	Correa, Nicolas,	Saint Catalina of Senna—seventeenth century.	The National Academy.
37	Lopez de Herrera,	The Crucifixion—seventeenth century.	The National Academy.

NO.	ARTIST.	TITLE.	OWNER.
51	Rodriguez, Juan, Juarez	San Juan de Dios — seventeenth century.	The National Academy.
52	Rodriguez, Nicolas,	Saint Gertrude — seventeenth century.	The National Academy.
53	Vazquez,	Assumption of the Virgin Mary — sixteenth century.	The National Academy.
54	Ibarra, José,	Scenes in the Life of the Virgin Mary — seventeenth century.	The National Academy
55	Vazquez, Ignacio,	Death of Goliath.	The National Academy.
56	Vega, Joaquín de la,	Portrait — Professor Carcanio — seventeenth century.	The National Academy.
57	Alelbar, José,	Portrait — Don Manuel Justo Bolea Sanchez	The National Academy.

## STATUARY.

NO.	ARTIST.	TITLE.	OWNER.
58	Dumaine,	The Orphans (plaster).	
59	Fernandez, J.,	A figure (plaster).	
60	Guerra, Gabriel,	A Fisherman (plaster).	
61	Sojo,	Mercury and Argos (plaster).	
62	Fernandez, J.,	A Calf (plaster).	

*(Annex, Gallery No. 29.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
28	Reball, Santiago,	Abraham.	The National Academy
33	De Mayora, Mrs. Guadalupe O.,	The Prayer.	Artist.
34	De Mayora, Mrs. Guadalupe O.,	Savoyard Beggar-Boy.	Artist.
35	De Mayora, Mrs. Guadalupe O.,	Fruit.	Artist.
36	De Mayora, Mrs. Guadalupe O.,	Fruit.	Artist.
37	De Mayora, Mrs. Guadalupe O.,	A Page.	Artist.
38	De Mayora, Mrs. Guadalupe O.,	The Madonna (after Murillo).	Artist.
39	De Mayora, Mrs. Guadalupe O.,	Portrait — Rembrandt.	Artist.
40	Morjete, Patricio José,	San Luis Gonzaga	The National Academy

# PENNSYLVANIA RAILROAD

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THE celebrity attained by the scenic and historic attractions along the Main Line and various branches of this Railroad, has led to the publication, by the Company, of a volume entitled

## THE PENNSYLVANIA RAILROAD, HISTORICAL AND DESCRIPTIVE,

Embracing Historical, Descriptive, and Statistical Notices  
of Cities, Towns, Villages, Stations, Industries,  
and objects of Interest on its various Lines  
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### VISITORS TO THE CENTENNIAL EXHIBITION

Will find this volume an interesting and valuable souvenir of Philadelphia and the great route connecting the East and West, as every station between, and including, New York and Pittsburg is illustrated and described in it.

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A. J. AIKENS, President.

New York Newspaper Union, 148 and 150 Worth St., New York.	315 Newspapers, \$3.00 per line, per week.
Chicago Newspaper Union, 114 Monroe St., Chicago.	350 " \$3.50 " "
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St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.	73 " \$ .75 " "

## THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed *co-operative* for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, *with advertisements*, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canadas, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

## The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least *one hundred copies every year to each square mile of the settled portions of the United States.*

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

New England . . . . .	78	Illinois . . . . .	117	Nebraska . . . . .	13
New York . . . . .	101	Michigan . . . . .	86	Missouri . . . . .	17
New Jersey . . . . .	27	Wisconsin . . . . .	98	Georgia . . . . .	10
Pennsylvania . . . . .	65	Tennessee . . . . .	29	Alabama . . . . .	32
Virginia . . . . .	24	Kentucky . . . . .	29	Louisiana . . . . .	11
No. and So. Carolina . . . . .	24	Minnesota . . . . .	79	Mississippi . . . . .	29
Ohio . . . . .	122	Iowa . . . . .	85	Other States . . . . .	46
Indiana . . . . .	81				

## AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the *lowest* aggregate weekly circulation being *seven hundred thousand seven hundred and thirty copies* (700,730).

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## SPAIN.

For information regarding the sale of Works of Art, apply at the office of the Spanish Commission, Main Building.]

(Memorial Hall, Gallery H.)

## SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
36	Nobas, Rosendo, Barcelona,	The Wounded Bull-Fighter (plaster).	Artist.
8	Talara, Domingo, Barcelona,	Massacre of the Innocents (terracotta).	Artist.

(Memorial Hall, Gallery H.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
38	Miravent y Gatell, José, Barcelona,	Flowers.	Artist.
40	Navarrete, R.,	Choir of Capuchin Monks.	Museum of Fine Arts, Madrid.
40	Fierros, D.,	Fountain in Galicia.	Museum of Fine Arts, Madrid.
40	Agrasot, I.,	The Two Friends.	Museum of Fine Arts, Madrid.
40	Maureta, G.,	Torquato Tasso retiring to the Monastery of San Onofre.	Museum of Fine Arts, Madrid.
40	Muñoz, Degrain A.,	The Prayer.	Museum of Fine Arts, Madrid.
40	Gonzalvo, P.,	The House of La Infanta at Saragossa.	Museum of Fine Arts, Madrid.
40	Puebla, D.,	The Landing of Columbus.	Museum of Fine Arts, Madrid.
40	Domingo, F.,	A Duel in the Seventeenth Century.	Museum of Fine Arts, Madrid.
40	Cano, E.,	Christopher Columbus in the Monastery of La Rabida.	Museum of Fine Arts, Madrid.
40	Castellano, M.,	Death of the Count of Villamediana.	Museum of Fine Arts, Madrid.
40	Vera, A.,	Burial of San Lorenzo at Rome.	Museum of Fine Arts, Madrid.
40	Casado, I.,	Last Moments of Don Fernando IV., el Emplazado.	Museum of Fine Arts, Madrid.
40	Vallés, L.,	Insanity of Donna Juana de Castilla.	Museum of Fine Arts, Madrid.
40	Mercadé, B.,	Translation of Saint Francis of Assisi.	Museum of Fine Arts, Madrid.
41	Häes, D. Carlos, Madrid,	Suburbs of Madrid.	Artist.
41	Häes, D. Carlos, Madrid,	Reminiscences of the Pyrenees.	Artist.
42	Morales, Divino,	The Nazarene.	Moreno y Galindo, Tomas, Madrid.
42	(Unknown),	Saint Bruno.	Moreno y Galindo, Tomas, Madrid.
42	Cano, Alonzo,	The Trinity.	Moreno y Galindo, Tomas, Madrid.
42	Murillo, Bartolomé Esteban,	Christ.	Moreno y Galindo, Tomas, Madrid.

NO.	ARTIST.	TITLE.	OWNER.
42c	Morales, Divino,	Madonna and Child.	Moreno y Galindo, Tomas, Madrid.
42f	(Unknown),	Triptych on Wood.	Moreno y Galindo, Tomas, Madrid.
43c	Lucas, E.,	Auto-da-Fé.	Lopez Martinez, Miguel, Madrid.
43i	Lucas, E.,	Saint Joseph.	Lopez Martinez, Miguel, Madrid.
44a	Gonzalvo, Perez Pablo, Madrid,	La Seo, Cathedral of Saragossa.	Artist.
44b	Gonzalvo, Perez Pablo, Madrid,	Chapel and Mausoleum of King Ferdinand and Queen Isabella, called "the Catholic," in the Cathedral of Granada.	Artist.
44c	Gonzalvo, Perez Pablo, Madrid,	Chapel in the Cathedral of Avila.	Artist.
44d	Gonzalvo, Perez Pablo, Madrid,	Sacristy in the Cathedral of Avila.	Artist.
44e	Gonzalvo, Perez Pablo, Madrid,	Basilica of San Vicente at Avila.	Artist.
45	Rivera,	Saint Jerome.	Huelbes y Temprado, Joaquin, Madrid.
46	Ruis de Valdivia, Nicolas, Madrid,	Aragonese Serenade.	Artist.
49a	Mélida, Enrique, Madrid,	Hall in Godoy's Palace.	Artist.
49b	Mélida, Enrique, Madrid,	The Lovers' Grove.	Artist.
50a	Jordan, Lucas,	David's Victory over Goliath.	Monreal y Garcia, Agustin, Madrid.
50b	Jordan, Lucas,	Jesus Appearing to Mary Magdalene.	Monreal y Garcia, Agustin, Madrid.
50f	(Unknown),	The Holy Mother and Child (on wood—fifteenth century).	Monreal y Garcia, Agustin, Madrid.
51	Gisbert, A.,	Landing of the Puritans in America.	Salamanca, Sr. Marqués de, Madrid.
52	Llanos y Keats, Juan, Madrid,	Throne Room in the Royal Palace, Madrid.	Artist.
54c	Jover, Francisco, Madrid,	A Capuchin Monk before the Roman Conclave.	Artist.
59c	Piñera, Juan de, Seville,	Andalusian Girl with Fan and Mantilla.	Artist.
62a	Alvarez y Espino, Gonzalo, Seville,	An Annual Fair attended only by Men.	Artist.
64	Cabral y Vejarano, Manuel, Seville,	A Water-Seller of the Alameda, in Seville.	Artist.
204	Velasquez,	Portrait.	Mazuel, Countess Antonia du.

(Annex, Gallery No. 31.)

### STATUARY, CARVINGS, ETC.

NO.	ARTIST.	TITLE.	OWNER.
1	Suñol, G.,	Dante (bronze).	Provincial Deputation of Barcelona.
2a	Magin Fita y Rovira, Barcelona,	A Valencian Woman (terra-cotta).	Artist.
2b	Magin Fita y Rovira, Barcelona,	A Guipuzcoan Woman (terra-cotta).	Artist.
3a	Nobas, Rosendo, Barcelona,	Portrait of M. Fortuny (plaster).	Artist.
3c	Nobas, Rosendo, Barcelona,	Miguel de Cervantes (plaster).	Artist.
4a	Pagès y Casamitjana, Eduardo, Barcelona,	A Fashionable Lady (marble).	Artist.
4b	Pagès y Casamitjana, Eduardo, Barcelona,	Catalonians (five statues).	Artist.

NO.	ARTIST.	TITLE.	OWNER.
5	Pagés y Serratosa, Francisco, Barcelona,	Romans (two statuettes, terra-cotta).	Artist.
6	Elias y Mascaró, Ramon, Barcelona,	Last Moments of Lincoln.	Artist.
7	Roca, hermanos, Barcelona,	Bronze bust.	Artist.
10	Fuentes, Xavier, Madrid,	Four cups, old Roman epoch; five cups, eighteenth century; three statuettes in clay; a pitcher and a plate.	Artist.
11	Tovar, Manuel, Seville,	Two Arabian models of the Alcázar, in Seville.	Artist.
12a	Peñas y Leon, Antonio de las, Seville,	A Bull-Fighter (terra-cotta).	Artist.
12b	Peñas y Leon, Antonio de las, Seville,	A Gipsy (terra-cotta).	Artist.
13	Soria Ferrando, Ricardo, Valencia,	Rivera (terra-cotta).	Artist.
14a	Santigosa, Francisco, Valencia,	Tragedy (plaster).	Artist.
14b	Santigosa, Francisco, Valencia,	Two statuettes (terra-cotta).	Artist.
19	Moliner, Antonio, Madrid,	An engraved piece of marble.	Artist.
20	Arzadun, Julian de, Villagarcia, Province of Pontevedra,	Bas-reliefs (in mother-of-pearl).	Artist.
23	Subirat, Ramon, Madrid,	Christ (wood, life size).	Artist.
24	Gomez, Gumerindo, Seville,	The Conception (wood).	Artist.
25	Garamendi, Bernabé de, Bilbao,	Christ (Ivory).	Artist.
26	Albazzi, José, Havana, Cuba,	Christopher Columbus (bas-relief).	Artist.

(Annex, Gallery No. 31.)

### OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
27	Benavent, Cayetano, Barcelona,	Moonlight on the Sea.	Artist.
28a	Miravent y Gatell, José, Barcelona,	Grapes.	Artist.
28b	Miravent y Gatell, José, Barcelona,	Grapes.	Artist.
28c	Miravent y Gatell, José, Barcelona,	Grapes.	Artist.
29a	Rabada y Vallve, Juan, Barcelona,	Banks of the River Ter.	Artist.
29b	Rabada y Vallve, Juan, Barcelona,	Banks of the River Llobregat.	Artist.
30a	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
30b	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
30c	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
30d	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
30e	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
30f	Arrau, Viuda de, Barcelona,	Fruits.	Artist.
31	Catalá, Federico, Barcelona,	Madonna (Virgen del Carmen).	Artist.

NO.	ARTIST.	TITLE.	OWNER.
33	Talarn, Pelegrin, Barcelona,	A Flower-Girl.	Artist.
33a	Moragas y Valero, Manuel, Barcelo- na,	Fortune and the Boy.	Artist.
33b	Moragas y Valero, Manuel, Barcelo- na,	The Topers.	Artist.
33c	Moragas y Valero, Manuel, Barcelo- na,	The Librarian.	Artist.
34	Urgell, Modesto, Barcelona,	The Village Grave-Yard.	Artist.
35	Torrecaasana, Francisco, Bar- celona,	Winter Evening.	Artist.
36a	Damis y Cortés, Joaquin, Cadiz,	Flowers.	Artist.
36b	Damis y Cortés, Joaquin, Cadiz,	Andalusian Customs.	Artist.
37	Rodriguez Val- cázar, Ramon, Cadiz,	Christ.	Artist.
38	Wade, Carlos, Ca- diz,	Andalusian Customs.	Artist.
39a	Villamil, Leopoldo, Lugo,	Dead Hare.	Artist.
39b	Villamil, Leopoldo, Lugo,	Hunting-Dogs.	Artist.
39c	Villamil, Leopoldo, Lugo,	Head of a Beggar.	Artist.
43a	Lucas, E.,	Marina.	Lopez Martinez, Miguel, Madrid.
43b	Lucas, E.,	Romería.	Lopez Martinez, Miguel, Madrid.
43c	Lucas, E.,	Civil War.	Lopez Martinez, Miguel, Madrid.
43d	Lucas, E.,	A Sermon.	Lopez Martinez, Miguel, Madrid.
43f	Lucas, E.,	The Eve of Epiphany.	Lopez Martinez, Miguel, Madrid.
43g	Lucas, E.,	Saint John (child).	Lopez Martinez, Miguel, Madrid.
43h	Lucas, E.,	Holy Family.	Lopez Martinez, Miguel, Madrid.
44f	Gonzalvo, Perez Pablo, Madrid,	Basilica of San Vicente, in Avila. Leaning Tower on the Plaza of San Felipe, in Saragossa.	Artist.
47	Sanchez Blanco, Pedro, Madrid,	View of the Sardinero, in Santander.	Artist.
48a	Garcia Hispaletto, Manuel, Madrid,	Rosita's Birthday.	Artist.
48b	Garcia Hispaletto, Manuel, Madrid,	A Yard in Seville.	Artist.
48c	Garcia Hispaletto, Manuel, Madrid,	A Girl in Old Spanish Costume.	Artist.
48d	Garcia Hispaletto, Manuel, Madrid,	Gallantry.	Artist.
48e	Garcia Hispaletto, Manuel, Madrid,	Murcians.	Artist.
48f	Garcia Hispaletto, Manuel, Madrid,	A Ball in Andalusia.	Artist.
50c	Zurbaran, F.,	Madonna and Sleeping Child.	Monreal y Garcia, Agus- tin, Madrid.
50d	De Blas del Prado,	Saint Francis of Assisi in Medita- tion.	Monreal y Garcia, Agus- tin, Madrid.
50e	(Unknown),	The Visitation of the Virgin (on wood, fifteenth century).	Monreal y Garcia, Agus- tin, Madrid.
53a	Garcia Valladolid, Isidro G., Ma- drid,	Girl in Old Spanish Costume.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
53a	Garcia Valladolid, Isidro G., Ma- drid,	Woman.	Artist.
53c	Garcia Valladolid, Isidro G., Ma- drid,	A Peasant Girl.	Artist.
53d	Garcia Valladolid, Isidro G., Ma- drid,	Saint Jerome (after Pereda).	Artist.
53e	Garcia Valladolid, Isidro G., Ma- drid,	A Girl.	Artist.
53f	Garcia Valladolid, Isidro G., Ma- drid,	The Conception (after Murillo).	Artist.
54a	Jover, Francisco, Madrid,	Faun playing a Flute.	Artist.
54b	Jover, Francisco, Madrid,	Pompeian Woman at the Bath.	Artist.
55a	Aragónés, Se- ñorita Joaquina, Malaga,	Two figures.	Artist.
55b	Aragónés, Se- ñorita Joaquina, Malaga,	Grapes and Flowers.	Artist.
55c	Aragónés, Se- ñorita Joaquina, Malaga,	Fish.	Artist.
56a	Niculoso, Fran- cisco,	Reproduction of oil painting from the centre and chief wall in the chapel of Ferdinand and Isabella "the Catholic," in the Alcázar at Seville. Painted on enameled bricks.	Academy of Fine Arts, Seville.
56b	Niculoso, Fran- cisco,	Reproduction of the Saint Jerome in the Monastery of San Isidro del Campo, founded by Guzman el Bueno, near Seville.	Academy of Fine Arts, Seville.
56c	Niculoso, Fran- cisco,	Two Holy Bishops.	Academy of Fine Arts, Seville.
56d	Niculoso, Fran- cisco,	Front of the Convent of Santa Paula at Seville, epoch of the two Catho- lic Regents.	Academy of Fine Arts, Seville.
57	Cortés y Cordero, Eduardo, Seville,	The Secret.	Artist.
58a	Valera, José Diaz,	Venus.	Ortiz y Campos, José, Seville.
58b	Ortiz, José,	A Capuchin Monk.	Ortiz y Campos, José, Seville.
58c	Ortiz, José,	Type from the Seventeenth Century.	Ortiz y Campos, José, Seville.
59a	Piñera, Juan, Se- ville,	Gipsy playing on a Pandereta.	Artist.
59b	Piñera, Juan, Se- ville,	Flowers.	Artist.
60a	Eder, Federico, Se- ville,	Packing Oranges in Seville.	Artist.
60b	Eder, Federico, Se- ville,	Andalusian Fair.	Artist.
60c	Eder, Federico, Se- ville,	A Spanish Calesa.	Artist.
60d	Eder, Federico, Se- ville,	Fascination.	Artist.
61	Quesada, A. M. de,	The Madonna del Carmen.	Caballero y Fiallo, Manuel, Seville.
62	Diez, Joaquin, Se- ville,	Bulls in the Fields.	Artist.
65	Garrido, Señorita Maria de la Sole- dad, Valencia,	Love's Messenger.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
66	Chartrand, Esteban S., Havana,	Valley of Jumury.	Artist.
67	Argumosa, José, Havana,	Collection of pictures.	Artist.

(Annex, Gallery No. 31.)

### WATER COLORS AND CRAYON.

NO.	ARTIST.	TITLE.	OWNER.
69	Sanchez, Pedro, Cadiz,	Four water colors.	Artist.
70	Guissasola, Federico, Pontevedra,	Water color.	Artist.
74	Lopez Valdemoro Ortiz de Lascano, Señorita Ines,	Crayon drawings.	Artist.

### OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
300	Navarrete, Ricardo, Madrid,	Las Hilanderas ("The Carpet Weavers"—copy after Velazquez).	Artist.
301a	(Unknown),	Saint Jerome.	Ochoa, Bernardino, Madrid.
301b	(Unknown),	Holy Family.	Ochoa, Bernardino, Madrid.
301c	(Unknown),	Virgin and Child.	Ochoa, Bernardino, Madrid.
301d, e	(Unknown),	Two vases with flowers.	Ochoa, Bernardino, Madrid.
301f, g	(Unknown),	The Combat.	Ochoa, Bernardino, Madrid.
301h, i	(Unknown),	Still Life.	Ochoa, Bernardino, Madrid.
301j	(Unknown),	Picnic.	Ochoa, Bernardino, Madrid.
301k	(Unknown),	Pasturing Bulls.	Ochoa, Bernardino, Madrid.
301m	(Unknown),	A Bull's head.	Ochoa, Bernardino, Madrid.
302	Elorriaga, Ramon, New York,	A Portrait (life size).	Artist.
303	Ortiz, D. J. de, New York,	Portrait of the celebrated explorer Stanley.	Artist.

### SCULPTURE.

NO.	ARTIST.	TITLE.	OWNER.
350	Jocson, Crispulo, Manila, Philippine Islands,	A bust (wood).	Artist.
351	Tampinco, Isabello, Manila,	A bas-relief (wood).	Artist.

### OIL PAINTINGS.

NO.	ARTIST.	TITLE.	OWNER.
352-53	Resurecsion, Felix,	Two landscapes.	Academy of Fine Arts, Manila.
354	Resurecsion, Felix,	A Canoe.	Academy of Fine Arts, Manila.
355	Resurecsion, Felix,	Woman selling Plants called "Lanzones."	Academy of Fine Arts, Manila.
356	Resurecsion, Felix,	Fisherman at Sacag.	Academy of Fine Arts, Manila.
357	Zaragoza, Miguel,	Laundry.	Academy of Fine Arts, Manila.
358	Zaragoza, Miguel,	Old Policeman.	Academy of Fine Arts, Manila.
359	Garcia, Regino,	The Laborer.	Academy of Fine Arts, Manila.
360-65	Villanueva, Esteban,	Natives of Manila (six paintings).	Academy of Fine Arts, Manila.
366	Flores, Simon, Manila,	A Village in the Province of Pampanga.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
267-68	(Unknown),	Two oil paintings.	St. Thomas College, Manila.
269	(Unknown),	Oil painting.	St. Thomas Museum, Manila.

## MOSAICS.

NO.	ARTIST.	TITLE.	OWNER.
124	Rodriguez, Desiderio, Cienfuegos, Cuba,	Mosaic table.	Artist.

(Spanish Government Pavilion.)

## COLLECTIVE EXHIBIT.

NO.	ARTIST.	TITLE.	OWNER.
9	Duque, Eugenio, Madrid,	Photographs of statues.	Artist.
15	Sellan, Gregorio, Madrid,	Dies and medals.	Spanish National Mint.
22	Sellan, Gregorio, Madrid,	Old patterns of mint dies.	Spanish National Mint.
63	Bibiloni, José, Barcelona,	India-ink drawings.	Artist.
69	Pupils of the Provincial Academy of Fine Arts, Barcelona,	Drawings.	Provincial Academy of Fine Arts.
72	(Unknown),	Calligraphs.	Provincial Deputation, Cadiz.
73	Gonzales y Montblanc, Modeste, Barcelona,	Lithographs.	Artist.
75	Aramburu, Ricardo, Seville,	Crayon drawings.	Artist.
76	Reynoso, Emilio, Havana,	Calligraphs.	Artist.
77	Gelabert y Hermaño, R., Barcelona,	Engravings.	Artist.
78	Lemus, Eugenio, Madrid,	Danae (copper engraving).	Artist.
79	Maura, Bartolomé, Madrid,	Surrender of Breda.	Artist.
80	Martinez, Espinosa, Juan, Madrid,	Etchings.	Artist.
81	Salcedo, Pedro, Morata, Province of Madrid,	Plan of the Escorial Royal Monastery, near Madrid.	Artist.
82	Arnanz, José, Havana,	Stone engravings.	Artist.
83	Vidal y Roger, Andres, Barcelona,	Printed and engraved music.	Artist.
84	Calografia Nacional, Madrid,	Lithographs.	Artist.
85	Sola y Roca, Ramon, Barcelona,	Lithographs.	Artist.
86	Mencha y Rodriguez, Faustino, Logroño,	Lithographs.	Artist.
87	Cardenera y Solano, Valentin, Madrid,	Iconography.	Artist.
88	Fortanet, E.,	Books.	Artist.
89	Artillery Museum, Madrid,	Collection of engravings of the Royal Artillery Manufactory at Trubia.	Artillery Museum, Madrid.
90	Ariza y Campano, José, Seville,	Typographs.	Artist.
91	Mateu, José Maria, Madrid,	Chromo-lithographs.	Artist.

NO.	ARTIST.	TITLE.	OWNER.
92	Arnanz, José, Havana,	Chromo-lithographs.	Artist.
93	Mariez-Currena, Heriberto, Barcelona,	Photographs.	Artist.
94	Nobas, Narciso, Barcelona,	Photographs.	Artist.
95	Moragas, Manuel García, Province of Barcelona,	Photographs.	Artist.
96	Casifol de Leopoldo, Xeres de la Frontera,	Helio-chromo.	Artist.
97	Napoléon é Hijo, A. and I., Barcelona,	Photographs.	Artist.
98	Provincial Commission, Lugo,	Monumental photographs.	Provincial Commission.
99	Rodriguez Cortes, César,	Photographs of engravings.	Artist.
100	Spreafico, José, Malaga,	Album, with views of the Monastery La Rabida and the Port of Palos.	Artist.
101	Alviac y Ca., Madrid,	Photographs.	Artist.
102	Julia y Garcia, Eusebio, Madrid,	Photographs.	Artist.
103	Laurent, I., y Ca., Madrid,	Photographs.	Artist.
104	Díaz, Otero, Eduardo, Madrid,	Photographs.	Artist.
105	Casa Nacional de Moneda, Madrid,	Photographs.	Spanish National Mint.
106	Instituto de Segunda Enseñanza, Madrid,	Photographs.	Artist.
107	Sebastiá Vila, Pedro, Seville,	Photographs.	Artist.
108	Rodriguez, Antonio, Seville,	Photographs.	Artist.
109	Sociedad Económica de Amigos del Pais, Seville,	Photographs.	Artist.
110	Arce, Innocencio, Barcelona,	Photo-lithographs.	Artist.
111	Almela y Vinet, Francisco, Seville,	Photographs.	Artist.
112	Mestres, O. José, Barcelona,	Architectural monuments.	Artist.
113	Soler, Federico, Barcelona,	Architectural monuments.	Artist.
114	Guastavin, Rafael, Barcelona,	Architectural monuments.	Artist.
115	Garriga y Roca, Miguel, Barcelona,	Architectural monuments.	Artist.
116	Fenas, Ramon, Barcelona,	Architectural monuments.	Artist.
117	Rovira y Rabassa, Antonio, Barcelona,	Architectural monuments.	Artist.
118	Arsenio, Alonso, Madrid,	Architectural monuments.	Artist.
119	Duque, Eugenio, Madrid,	Photographs of architectural monuments.	Artist.
120	Marín Baldo, José, Madrid,	Photographs of architectural monuments.	Artist.
122	Benito, Santiago de, Escorial, Province of Madrid,	Locks.	Artist.
123	Bustamente y Gallo, Madrid,	Mosaic in wood.	Artist.



ARTIST.	TITLE.	OWNER.
Fernandez Cuevas, Pascual, Bri- biesca, Province of Burgos,	Three pictures of artificial birds.	Artist.
Ruiz, Manuel, Ca- diz,	Hair-work.	Artist.
Ruiz, Manuel, Ca- diz,	Wafer-work.	Artist.
Lozano y Villarejo, Mateo, Madrid,	Albums.	Artist.
Serrano y Arenas, Havana,	Silk embroideries.	Artist.
Comacho de Diaz, Soledad, Havana,	Work made with scissors.	Artist.
Museo de San Tomas, Manila,	Flowers made of leaves of camote- cahoy.	Artist.
Casas, José, Ha- vana,	Hair-work.	Artist.
Ortells, Carlos, Ha- vana,	Hair-work.	Artist.

# RUSSIA.

(Memorial Hall, Gallery M.)

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
1	Aivazowsky, John, Theodosia, Crimea,	Storm on the Black Sea, near the Crimean coast.
2	Aivazowsky, John, Theodosia, Crimea,	View of Constantinople, from the European shore.
3	Aivazowsky, John, Theodosia, Crimea,	Tartar Women in the Crimea.
4	Aivazowsky, John, Theodosia, Crimea,	After the Storm (Sunset).
5	Aivazowsky, John, Theodosia, Crimea,	Storm in the North Sea.
6	Aivazowsky, John, Theodosia, Crimea,	The Rising Moon, Black Sea.
7	Aivazowsky, John, Theodosia, Crimea,	Shower in the Crimean Mountains.
8	Bogoliuboff, Alexis, Paris,	Ice-Drift on the Neva.
9	Bogoliuboff, Alexis, Paris,	Landscape.
10	Bronnikoff, Theodore, Rome,	Roman Thermal.
11	Frentz, Rodolphus, St. Petersburg,	The Hunter.
12	Gerson, Wojciech, Warsaw,	The Morning Mist.
13	Gerson, Wojciech, Warsaw,	Summer Rain.
14	Gerson, Wojciech, Warsaw,	Knights of the Teutonic Order in Poland, in the Fourteenth Century.
15	Groozinsky, Peter, St. Petersburg,	Russian Team.
16	Horavsky, Apollinaris, St. Petersburg,	Caucasian Landscape—View of the River Arva.
17	Jooravieff, F., St. Petersburg,	The Step-Mother.
18	Jooravieff, F., St. Petersburg,	The Chimney-Sweeper.
19	Klodt, Baron Michael, St. Petersburg,	Birch Forest.
20	Klodt, Baron Michael, St. Petersburg,	Landscape.
21	Klodt, Baron Michael, St. Petersburg,	Landscape.
22	Korzoehin, Alexis, St. Petersburg,	Sunday Tea-Party.
23	Korzoehin, Alexis, St. Petersburg,	Scene in the Wood.
24	Kostrzewski, Francis, Warsaw,	Hunting in Winter.
25	Malyshef, ———, Sergievski-Posad,	Icons (painted images).
26	Miller, Charles, Warsaw,	Hamlet.
27	Miller, Charles, Warsaw,	An Italian Woman.
28	Nacoomof, Alexis, St. Petersburg,	A Smoky Cottage.
29	Nacoomof, Alexis, St. Petersburg,	Shepherd Boy.
30	Nacoomof, Alexis, St. Petersburg,	Orphan Girl.
31	Lemoch, Charles, St. Petersburg,	Orphan Girl.
32	Lemoch, Charles, St. Petersburg,	Peasant Girl Feeding Poultry.
33	Lemoch, Charles, St. Petersburg,	Peasant Girl Making her Toilet.
34	Semiradsky, Henry, Rome,	The Amulet-Seller.
35	Sokoloff, Peter, St. Petersburg,	Russian Team.
36	Zagorsky, Nicolas, St. Petersburg,	Family Scene.
37	Gerimski, Alexander, Warsaw,	A Tavern.
37a	Gerimski, Alexander, Warsaw,	A Game at Morro.

NO.	ARTIST.	TITLE.
38	Skirmunt, Simon de, Brindisi, Italy,	A Festival in the Palazzo Colonna, Rome (sixteenth century).
39	Skirmunt, Simon de, Brindisi, Italy,	A Member of the Council of Ten, Venice.
40	Skirmunt, Simon de, Brindisi, Italy,	Reflection.
41	Verestchaghin, Peter, Sestoretzsk, near St. Petersburg,	Winter Palace Square.
42	Verestchaghin, Peter, Sestoretzsk, near St. Petersburg,	The Alexander Column (Winter Palace Square).
43	Svertchkoff, Nicolas, Zarskoe-Selo, near St. Petersburg,	Carnival Week in the Country.
44	Silvanovitch, Nicolas, St. Petersburg,	The Prisoner.
45	Becker, Adelph, St. Petersburg,	The New-Born.
46	Lindholm, B. A., St. Petersburg,	A Steamer in Floating Ice.
47	Munsterhelm, Magnus, St. Petersburg,	Landscape.
48	Lagorio, Lewis, St. Petersburg,	The Kishaoor Valley, Caucasus.
49	Lagorio, Lewis, St. Petersburg,	Along the Road from Tiflis to Akhaltzik.
50	Skirmund, S. A., St. Petersburg,	A Family Party on the Balcony.
51	Clever, Julius, St. Petersburg,	The First Snow on a Ploughed Field.
52	Orlofsky, Wladimir, St. Petersburg,	Fishermen.
53	Tomashefky-Bontcha, Julius, St. Petersburg,	Scene in Molière's "Tartuffe."
54	Pleshanoff, Paul, St. Petersburg,	An Italian.
55	Eckhorst, B., St. Petersburg,	Landscape.
56	Eckhorst, B., St. Petersburg,	Landscape.
57	Karpoft, —, St. Petersburg,	Young Girl Sleeping.
58	Krassofsky, Nicolas, St. Petersburg,	Study—a horse.
59	Krassofsky, Nicolas, St. Petersburg,	Study—a horse.
60	Titoff, Andrew, Rastoff, Yaroslavl,	Enameled images (icons).
61	Marozoff, A. B., Moscow,	Portrait of the Emperor of Russia, and images.
62	Racotchi, Sidorsky & Co.,	Images (icons).
63	Salabanoff, D. A., Nijni-Novgorod,	Painted images (imitations of ancient icons).

## STATUARY.

NO.	ARTIST.	TITLE.
64	Ryger, Theodore, Warsaw,	Bust of Washington (marble).
65	Ryger, Theodore, Warsaw,	Bust of Dr. Levitoux (plaster of Paris).
66	Zengler, F., Warsaw,	The Mother's First Joy.
67	Zengler, F., Warsaw,	Bashfulness.
68	Zengler, F., Warsaw,	Sophia (Mickievicz's poem).
69	Goojoff, Nicolas, Borovichi, Novgorod,	Painted figures in terra-cotta, representing national subjects.
71	Ryger, Theodore, Warsaw,	Madonna and child Jesus (marble bas-relief).
72	Zengler, F., Warsaw,	The poet Mickievicz (bas-relief in marble).

## WOOD CARVINGS.

NO.	ARTIST.	TITLE.
74	Bauman, Augustus, Moscow,	Images carved in wood.
75	Decamilly, St. Petersburg,	Ornamental carvings.
78	Tsyroolnikoff, P., Sergievsky-Possad, near Moscow,	Images carved in wood.
79	Kroostasheff, T. S., Sergievsky-Possad, near Moscow,	Images carved in wood.
80	Koornetsoff, —, St. Petersburg,	Child's head carved in wood.
81	Riablinin, —, St. Petersburg,	Portrait.

## IVORY CARVINGS.

NO.	ARTIST.	TITLE.
82	Alexieff, A., Vologda,	Carving in ivory.

## WATER COLORS.

NO.	ARTIST.	TITLE.
83	Sokoloff, Peter, St. Petersburg,	Water colors.
84	Kostrzewsky, Francis, Warsaw,	The Dear Friend.

*(Memorial Hall, Gallery M.)*

## OIL PAINTINGS.

NO.	ARTIST.	TITLE.
85	Bogatsky,	Portrait of Prince Gortchakoff.
86	Groozintsky, P., St. Petersburg,	Welcome Home to the Bride.
87	Groozintsky, P., St. Petersburg,	Gypsy Festivities.
88	Jooravleff, F., St. Petersburg,	Dinner after a Funeral.
89	Jooravleff, F., St. Petersburg,	Take me Down.
90	Jooravleff, F., St. Petersburg,	Blessing the Bride before Marriage; a Russian Custom.
91	Nacomo, A., St. Petersburg,	Fair in Tiflis, Caucasus.

Other Russian Art Exhibits are installed in the Main Building, and enumerated in that volume of the Catalogue.

## HEALTH! BEAUTY!!

Young, Pure, and Rich Blood, Increase of Flesh and Weight, Clear Skin, and Beautiful Complexion secured to all through

## DR. RADWAY'S SARSAPARILLIAN RESOLVENT

Every drop of the Sarsaparillian Resolvent communicates through the Blood, Sweat, Urine, and other fluids and juices of the system the vigor of life, for it repairs the wastes of the body with new and sound material. Scrofula, Consumption, Glandular Disease, Ulcers in the Throat, Sores, Tumors, Nodes in the Glands and other parts of the system, Sore Eyes, Strumous Discharges from the Ears, and the worst forms of Skin Diseases, Eruptions, Fever Sores, Scald Head, Ring Worm, Salt Rheum, Erysipelas, Acne, Black Spots, Worms in the Flesh, Tumors, and all Weakening and Painful Discharges and Night Sweats are within the curative range of this wonder of Modern Chemistry, and a few days' use will prove to any person using it for one of these forms of disease, its potent power to cure them. If the patient, daily becoming freed by the wastes and decomposition that are continually progressing, succeeds in arresting these wastes, and repairs the same with new material, made from healthy blood, and this the Sarsaparillian will and does secure, a cure is certain; for, when once this remedy commences its work of purification and succeeds in diminishing the loss of wastes, its repairs will be rapid, and every day the patient will feel himself growing better and stronger, the food digesting better, appetite improving, and flesh and weight increasing. Not only does the SARSAPARILLIAN RESOLVENT excel all known remedial agents in the cure of Chronic, Scrofulous, Constitutional, and other Diseases, but it is the only positive cure for Kidney, Bladder, and Urinary Diseases, Gravel, Diabetes, Dropsy, Stoppage of Water, Incontinence of Urine, Bright's Disease, Albuminuria, and in all cases where there are brickdust deposits, or the water is thick, cloudy, mixed with substance like the white of an egg, or threads like white silk, or there is a morbid, dark, bilious appearance, and white bonedust deposits, and when there is a pricking, burning sensation when passing water, and pain in the Small of the Back along the Loins.

**Tumor of 12 years' growth cured by Radway's Resolvent.**

BEVERLY, MASS., July 18th, 1869.

DR. RADWAY: I have had Ovarian Tumor in the ovaries and bowels. All the doctors said *"there was no help for it."* I tried everything that was recommended, but nothing helped me. I saw your Resolvent, and thought I would try it, but *had no faith* in it, because I had suffered **TWELVE YEARS.** I took *six bottles of the Resolvent*, one box of Radway's Pills, and used two bottles of your **READY RELIEF**, and there is not a sign of a tumor to be seen or felt, and I feel **BETTER, SMARTER**, and happier than I have for twelve years. The worst tumor was in the left side of the bowels, over the groin. I write this to you for the benefit of others. You can publish if you choose.

HANNAH P. KNAPP.

R. R. R.

## RADWAY'S READY RELIEF

For the worst pains in from one to twenty minutes. Not one hour after reading this advertisement need any one suffer with pain. Radway's Ready Relief is a cure for every pain. It was the first and is **THE ONLY PAIN REMEDY** that instantly stops the most excruciating pains, such as Inflammations, and cures Congestions, whether of the Lungs, Stomach, Bowels, or other parts or organs, by one application, *in from one to twenty minutes.* No matter how violent or protracted the pain the Rheumatic, Bedridden, Infirm, Crippled, Nervous, Neuralgic, or prostrated with disease may suffer,

## RADWAY'S READY RELIEF

Will afford instant ease. Inflammation of the Kidneys, Inflammation of the Bladder, Inflammation of the Bowels, Congestion of the Lungs, Sore Throat, Difficult Breathing, Palpitation of the Heart, Hysterics, Croup, Diphtheria, Catarrh, Influenza, Headache, Toothache, Neuralgia, Rheumatism, Cold Chills, Ague Chills. The application of the **READY RELIEF** to the part or parts where the pain or difficulty exists will afford ease and comfort. Twenty drops in a half tumbler of water will, in a few moments, cure Cramps, Spasms, Sour Stomach, Heartburn, Sick Headache, Diarrhoea, Dysentery, Colic, Wind in the Bowels, and all Internal Pains. Travelers should always carry a bottle of **RADWAY'S RELIEF** with them. A few drops in water will prevent sickness or pains from change of water. It is better than French Brandy or Bitters as a stimulant.

## FEVER AND AGUE

**FEVER AND AGUE** cured for **FIFTY CENTS.** There is not a remedial agent in this world that will cure Fever and Ague and all other Malarious, Bilious, Scarlet, Typhoid, Yellow, and other Fevers (aided by **RADWAY'S PILLS**) as quick as **RADWAY'S READY RELIEF.** Fifty cents per bottle.

## DR. RADWAY'S PILLS,

Perfectly tasteless, elegantly coated, for the cure of all Disorders of the Stomach, Liver, Bowels, Kidneys, Bladder, Nervous Diseases, Headache, Constipation, Costiveness, Indigestion, Dyspepsia, Biliousness, Bilious Fever, Inflammation of the Bowels, Piles, and all Derangements of the Internal Viscera. Warranted to effect a Positive Cure. **RADWAY'S PILLS** will free the system from all the above-named disorders. Price, 25 cents per box.

Read **FALSE AND TRUE.** Send one letter stamp to **RADWAY & Co., No. 32 Warren Street, New York.** Information worth thousands will be sent you.



# PHOTOGRAPHY.

## No. 104.—PHOTORGAPHIC EXHIBITION BUILDING.

Architect, H. J. SCHWARZMANN.—Size, 242 by 77 feet.

Situated on the Avenue of the Republic, north of the Main Building, and east of Memorial Hall. It is a one-story building, containing a single large chamber, with screens projecting from the side walls and forming alcoves for exhibition purposes.

NO.	ARTIST.	TITLE.	LOCATION.
1	Kurtz, W., New York,	Photographs, in pastel, oil, and crayon.	Screen 1, W.
2	Benerman & Wilson,	Photographic transparencies for magic lanterns.	Window, alcove 13.
3	Wenderoth & Co., Philadelphia,	Plain and colored photographs.	Screen 1, E.
4	Brady, W. B., Washington,	Photographs, plain and India ink.	Alcove 2, wall.
5	Alman & Co., New York,	Photographs, plain and colored, in pastel, oil, and India ink.	Screen 2, W.
6	Anthony, E. & H. T., & Co., New York,	Magic lanterns and graphoscopes.	Main avenue.
7	Burrell, D. T., Brockton, Mass.,	Plain photographs.	Screen 2, S.
8	Sibley & Co., L. D., Vineland, N. J.,	Stereoscopic albums.	Alcove 3.
9	Robbins, F., Oil City, Pa.,	Photographer's dark tent.	Alcove 15, S. E.
10	Hazard, W. B., Philadelphia,	Shade rollers.	Alcove 1.
11	Wilson, J. J., New York,	Improved magic lantern.	Alcove 3.
12	Bierstadt, Ch., Niagara Falls, N. Y.,	Stereoscopic views.	Screen 2, E.
13	Delamater, R. S., Hartford, Conn.,	Photographs, collections of.	Screen 3, W.
14	Waller & Schrader, Brooklyn, N. Y.,	Photographic views.	Screen 3, W.
15	Cremer, James, Philadelphia,	Improved metallic graphoscopes.	Main avenue.
16	Watkins, E. C., San Francisco,	Photographic views, California.	Screen 3, E.
17	Cox, W. A., Baltimore,	Porcelain miniatures.	Screen 4, W.
18	Edgar, Lydia, Philadelphia,	Photographs in crayon.	Screen 4, W.
19	Weston, N., San Francisco,	Photographs, enameled.	Screen 4, W.
20	Stoddard, S. R., Glenn's Falls, N. Y.,	Photographic views and illustrated guide-books.	Screen 4, W.
21	Hay, J. J., San Francisco,	Stereoscopic views, Yosemite Valley.	Screen 4, W.
22	Berkman, O., Philadelphia,	Pyro-photographs, on porcelain.	Wall, alcove 3.
23	American Photo-Relief Printing Company, Philadelphia,	Transparencies, on glass, for magic lantern, by Woodbury process.	Window, alcove 3.
24	Bradley & Rulofson, San Francisco,	Photographs, plain, in pastel, and crayon.	Wall and screen 4, E.

NO.	ARTIST.	TITLE.	LOCATION.
25	Melander & Brother, Chicago,	Stereoscopic groups.	Screen 4, S.
26	Newell, R., & Son, Philadelphia,	Photographic views.	Screen 5, W.
27	Tyson, I. G., Philadelphia,	Photograph in crayon.	Screen 5, S.
28	Killoltz, B., Chicago,	Plain photographs.	Screen 5, S.
29	Sweeny, T. T., Cleveland,	Photographic views.	Screen 5, E.
30	Thorn, G. W., New York,	Photographic views.	Screen 5, E.
31	Seibert, S. R., Washington,	Improved stereoscopic camera.	Alcove 6.
32	Houseworth, Thos., San Francisco,	Photographs, Yosemite Valley.	Wall, alcove 6.
33	Anderson, D. H., Richmond,	Photographic portraits.	Screen 6, W.
34	Chase, W. M., Baltimore,	Stereoscopic views.	Screen 6, W.
35	Hardy, A. N., Boston,	Photographic portraits.	Screen 6, W.
36	Taylor, W. Curtis, Philadelphia,	Photographs, plain and colored, porcelain miniatures.	Screen 6, E.
37	Haworth, J., Philadelphia,	Photo-apparatus and albumen paper.	Main avenue.
38	Bass, P. P., Bangor, Maine,	Burnisher for photographs.	Main avenue.
39	Aitken, Philadelphia,	Photographs in crayon.	Wall, alcove.
40	Collins, Son, & Co., A. M., Philadelphia,	Card mounts, in various styles, for photographs.	Wall, alcove 7.
41	Bigelow, L. G., Detroit, Mich.,	Photographs, single and in groups.	Screen 7, W.
42	Marcy, L. J., Philadelphia,	Improved oil and lime-light lanterns.	Screen 7, S.
43	Ryder, J. F., Cleveland,	Photographs in crayon, and chromo "Yankee Doodle."	Screen 7, E.
44	Schriber & Son, Philadelphia,	Photographs of animals.	Screen 8, W.
45	Kent, J. H., Rochester, N. Y.,	Large photographic portraits, direct from life.	Screen 8, E.
46	Gutekunst, F., Philadelphia,	Photographs, glacé, crayon, water color, and plain.	Screen 9, N. wall.
47	Root, M. A., Philadelphia,	Illustrations of photography from August, 1839, to May, 1876.	Screen 8, S.
48	Pattburg & Bros., New York,	Passe-partouts and velvet cases.	Main avenue.
49	Entrekin, W. G., Philadelphia,	Oscillating enameling machine.	Main avenue.
50	Butterfield, D. W., Boston,	Large landscape views.	Screen 9, E.
51	Rau, George, Philadelphia,	Photographic portraits.	Screen 9, E.
52	Clemons, J. R., Philadelphia,	Sample prints on his albumen and on plain paper.	Screen 9, E.
53	Hesler, A., Evanston, Ill.,	Portraits of babies.	Wall, alcove 10.
54	Fitzgibbon, J. H., St. Louis,	Collection of daguerreotypes, twenty-five years old.	Wall, alcove 10.
55	Landy, J., Cincinnati,	Collection of character photographs representing the Seven Ages of Man, laughing and crying babies, and large photograph portraits.	Screen 10, W. Screen 10, S.
56	Rocher, H., Chicago,	Photographs, single figures and compositions, in size from 17 by 20 plate to 11 by 14; imperial, boudoir, and promenade portraits.	Screen 10, E.
57	Sarony, N., New York,	Photographs, plain and in crayon.	Wall, alcove 11.



NO.	ARTIST.	TITLE.	LOCATION.
58	Broadbent & Phil- lips, Philadelphia,	Photographs, plain, crayon, and water color.	Screen 11, W.
59	Root, Samuel, Du- buque, Iowa,	Photographs.	Screen 11, S.
60	Wilson, Hood, & Co., Philadelphia,	Photographic accessories, chemicals, and lenses.	Main avenue.
61	Mosher, C. D., Chi- cago,	Photographic portraits and patent album.	Screen 11, E.
62	American Photo-Re- lief Printing Co., Philadelphia,	Transparencies by Woodbury pro- cess.	Window, alcove 11.
63	Beckers, Alex., New York,	Revolving stereoscopes.	Alcove 11.
64	Hanse, A. L., Phila- delphia,	Photographic chemicals.	Alcove 11.
65	Evans, G. & W. P., Malden, Mass.,	Photographic chairs.	Alcove 11.
66	Allen & Rowell, Bos- ton,	Enlarged photographs in permanent pigments.	Screen 12, W.
67	Seiler, Carl, Phila- delphia,	Micro-photographs.	Screen 12, S.
68	Hovey, E. F., Phila- delphia,	Photographic views.	Screen 12, E.
69	Holyland, J., Balti- more,	Photographic groups.	Screen 12, E.
70	Gubleman, Theo., Jersey City, N. J.,	Photographs, plain and in pastel.	Screen 12, E.
71	Babbitt, P. D., Ni- agara, N. Y.,	Transparencies.	Window, alcove 13.
72	Stock & Bro., J., New York,	Photographic apparatus.	Alcove 13.
73	McAllister, T. H., New York,	Magic lantern apparatus.	Alcove 13.
74	Zimmerman, T., St. Paul, Minn.,	Portraits of Indians, and views of Minnesota scenery.	Screen 13, W.
75	Schwind & Kreuger, New York,	Photographic portraits.	Screen 13, W.
76	Train & Bundy, Helena, Montana,	Photographic portraits.	Screen 13, S.
77	Peck, S. M., & Co., New York,	Photographic apparatus.	Main avenue.
78	Marshall, W. I.,	Views of Yellowstone Park.	Screen 16, E.
79	Holler, H., New York,	Photo-portraits and camera-stand.	Wall, alcove 14.
80	Gerlach & From- hagen, Philadel- phia,	Photographs, plain and in crayon.	Wall, alcove 14.
81	Broich & Kreuger, Milwaukee, Wis.,	Photographic portraits.	Screen 14, W.
82	Busey, N. H., Balti- more,	Photographic portraits.	Screen 14, W.
83	McIntyre & Co., Alexandria, N. Y.,	Stereoscopic views.	Screen 14, W.
84	Benerman & Wilson, Philadelphia,	Photographic publications.	Screen 14, S.
85	Centennial Photo- graph Co., Phila- delphia,	Views of Centennial Exhibition.	Screen 14, E.
86	Paxon Bros., New York,	Enlarged photographs.	Wall, N. E. corner.
87	Scovill Manufactur- ing Co., New York,	Photographic apparatus.	Alcove 15.
88	Harring, J. C., Mas- sillon, O.,	Photographic portraits.	Wall, N. E.
89	Schlesinger, L., Phil- adelphia,	Photograph album of Philadelphia physicians.	Wall, S. E.
90	Gurney, J. J., New York,	Colored enameled photographs.	Wall, S. E.
91	Waterman & Hall, New York,	Views of buildings.	Wall, S. E.

NO.	ARTIST.	TITLE.	LOCATION.
92	Woodward, D. A., Baltimore,	Solar cameras.	Alcove 16, S.E.
93	Semmendinger, A., Fort Lee, N. J.,	Photograph apparatus.	Alcove 15, S.E.
94	Seavey, L. W., New York,	Photographic backgrounds, papier mâché, furniture, and accessories.	Wall, alcove 15, S.E.
95	Reid, J. J., Paterson, N. J.,	Views of mechanical constructions.	Screen 15, E.
96	Doremus, Pater- son, N. J.,	Views of Mississippi, and portraits.	Screen 15, E.
97	De Silva, Abraham, Hartford, Conn.,	Interior views of students' rooms, Yale College.	Screen 15, N.
98	Howell, J. R., New York,	Artistic photographic portraits.	Screen 15, W.
99	Pach, New York,	Photographic views.	Wall alcove 15.
100	Paullin, W. T., Phil- adelphia,	Photographic portraits.	Screen 16, E.
101	Gentile & Co., Chi- cago,	Photographic portraits.	Screen 16, E.
102	Simons, M. P., Phil- adelphia,	Photographic portraits.	Screen 3, W.
103	Evans, E. D., Corn- ing, N. Y.,	Photographic portraits.	Screen 16, N.
104	Lewis, T., Cam- bridgeport, Mass.,	Historical stereoscopic views.	Screen 16, W.
105	Black, J. W., & Co., Boston, Mass.,	Views of the Arctic Regions.	Screen 16, W.
106	Bonine, E. A., Em- porium, Pa.,	Stereoscopic views of Florida.	Screen 16, W.
107	Schluter, B., Kan- sas City,	Photographs in crayon.	Screen 16, W.
108	French, J. A., Keene, N. H.,	Stereoscopic portraits, colored.	Screen 16, S.
109	Brooks, Thomas, Philadelphia,	Glacé embossing press.	Wall, alcove 17.
110	Freeman, A., Dal- las, Texas,	Photographic portraits and views.	Screen 17, E.
111	Levy, Albert, New York,	Architectural views.	Screen 17, E.
112	Strong & Dotterer, Philadelphia,	Views of the Holy Land.	Screen 17, E.
113	Wetherby, Mrs., Philadelphia,	Colored photographs.	Screen 17, W.
114	Payne, H. T., Los Angeles, Cal.,	Views of semi-tropical California.	Screen 17, W.
115	Meyers, J. W., New York,	Photograph of pen-drawing.	Screen 17, S.
116	Weaver, Mrs. A. K., Salem, O.,	Photograph—Fern-leaf mottoes.	Screen 17, W.
117	Folsom, J. H., Dan- bury, Conn.,	Cabinet and solar prints.	Screen 17, W.
118	Colinas, G. W., Ur- bana, O.,	Cabinet photographs.	Screen 17, W.
119	Hall, —, Great Bar- rington, Mass.,	Stereoscopic views and portraits.	Screen 17, W.
120	Gaffield, Thomas, Boston,	Original designs of ferns, feathers, and mosses in photography.	Screen 17, S.
121	Graves, J. A., Dela- ware Water Gap, Pa.,	Landscape views.	Screen 18, E.
122	Bachrach Bros., Baltimore,	Portraits and enlargements.	Screen 18, E.
123	Robbins, F., Oil City, Pa.,	Views of the Oil Region.	Screen 18, E.
124	Bell & Rau, Phila- delphia,	Stereoscopic views from dry plates.	Screen 18, N.
125	American Photo- Relief Printing Co., Philadelphia,	Transparencies for door and window decorations, by Woodbury process.	Door, alcove 9.
126	Moran, John, Phil- adelphia,	Landscape views.	Screen 18, E.

NO.	ARTIST.	TITLE.	LOCATION.
127	Van Loo, Leon, Cincinnati,	Photograph portraits, single and in groups.	Screen 13, W.
128	Okerbund, E. G., Ishpeming, Mich.,	Photographic portraits.	Screen 2, N.
129	Marshall, Aug., Boston,	Vitrified photo enamels.	Screen 22, N.
130	Rice, J. D., Philadelphia,	Improved stereoscope.	Screen 8, N.
131	Wallace, E., Jr., Philadelphia,	Specimens of amateur photography.	Screen 17, W.
132	Rice Bros., Washington, D.C.,	Specimens of glacé photographs.	Screen 7, N.
133	Stockwell, N., Bainbridge, N.Y.,	Dry plate camera.	Alcove 6, N.
134	Morrow, J. H., Philadelphia,	Microscopic photographs for charms.	Main avenue.
135	Gaffield, Thomas, Boston,	Photographs illustrating the action of sunlight on glass.	Wall, alcove 12.
136	Newton, H. J., New York,	Photographs, from emulsion, dry plate negatives.	Wall, alcove N.W.

## FOREIGN.

NO.	ARTIST.	TITLE.	LOCATION.
137	Lemere, Bedford, & Co., London,	Architectural photographs.	
138	Wilson, G. W., Aberdeen,	Photograph album of Scottish scenery.	Table, alcove 29.
139	Wilson, G. W., Aberdeen,	Glass transparencies and enlarged views in carbon.	Wall, alcove 29.
140	Henderson, A. L., London,	Vitrified enameled photographs, plain and colored.	Wall, W.
141	Lee, E. P., & Co., Cardiff,	Enameled photographs, plain and colored.	Wall, W.
142	Baum, F., Manchester, England,	Permanent photographs in carbon.	Wall, W.
143	Frédelle & Marshall, London,	Card portraits.	Wall, W.
144	Barnard, J., Bedford, England,	Permanent photographs in carbon.	Wall, W.
145	Hanson, W., Leeds, England,	Photographic portraits, card and cabinet.	Wall, S.W.
146	Bedford, W., England,	Photographic landscapes.	Wall, S.W.
147	Brownrigg, T. M., Dublin,	Photographic landscapes.	Wall, S.W.
148	Crawshaw, Robert, Wales,	Photographic landscapes.	Wall, S.W.
149	Jennings, Payne, Dublin,	Photographic landscapes.	Wall, S.W.
150	England, William, London,	Landscapes and statuary.	Wall, W.
151	Wortly, Stuart, London,	Seascape, landscape, and portrait studies.	Wall, S. & W.
152	Norman, Carl, Tunbridge Wells,	Landscape and architectural photographs.	Wall, S.
153	Heath, Vernon, London,	Landscape studies, enlarged and printed in carbon.	Screen 26, W.
154	Dallmeyer, J. H., London,	Specimen of photographs made with Dallmeyer's lenses.	Screen 26, N.
155	Ross & Co., London,	Specimen of photographs made with Ross's symmetrical lenses.	Wall, W.
156	Hudson, F., Ventnor,	Landscape photographs.	Screen 28, E.
157	Stereoscopic Company, London,	Portraits of celebrities.	Screen 28, E.
158	Hedges, David, Lytham, Eng.,	Portraits of animals.	Screen 28, E.

NO.	ARTIST.	TITLE.	LOCATION.
159	Crawshay, Robert, Wales,	Landscape studies.	Screen 28, E.
160	Boal, A. & J., London,	Landscape studies.	Screen 28, E.
161	Robinson, H. P., Leamington, Eng.,	Instantaneous views and composition portraits from life.	Wall, alcove 28.
162	Good, Frank M., London,	Views of Palestine.	Wall, alcove 28.
163	Beau, Adolph, London,	Photographs of silver-ware, and portraits.	Screen 27, W.
164	York, Frederick, London,	Photographs and lantern transparencies illustrating zoology.	Screen 27, W.
165	Crawshay, Robert, Wales,	Landscape views.	Screen 27, W.
166	Cameron, Mrs.,	Character portraits.	Screen 27, W.
167	Slingsby, R., Lincoln, England,	Large portraits from life.	Screen 27, W.
168	Fradell & Marshall, London,	Enlarged portrait in carbon.	Screen 27, W.
169	York, F., London,	Architectural studies.	Screen 27, W.
170	Hanson, W., Leeds,	Card, cabinet, and large portraits.	Wall, alcove 29.
171	Newman, J. H., N. S. Wales,	Large photograph portraits.	Screen 27, N.
172	Newman, J. H., N. S. Wales,	Cabinet photographs.	Screen 27, N.
173	Notman, W., Montreal, Canada,	Photographs in crayon and water color.	Screen 27, E.
174	Notman, W., Montreal, Canada,	Photographs in oil and water color.	Wall, alcove 27.
175	Notman, W., Montreal, Canada,	Composition groups and plain photographs.	Screen 26, W.
176	Barrow, R. W., Kingston, Canada,	Cabinet photographs and views.	Screen 26, N.
177	Grenier, N. N., Montreal, Canada,	Photographing on wood.	Screen 26, N.
178	Barrow, R. W., Kingston, Canada,	Photographs of buildings.	Screen 26, E.
179	Henderson, Alex., Montreal, Canada,	Photographic landscapes.	Screen 26, E.
180	Adams, Owen, Sound, Canada,	Photographic landscapes.	Screen 26, E.
181	Anderson, R. W., Toronto, Canada,	Photographic landscapes.	Screen 26, E.
182	Climo, J. S., St. John,	Stereoscopic views.	Screen 26, E.
183	Bruce, J., & Co., Toronto, Canada,	Photographic portraits.	Screen 26, E.
184	Henderson, Alex., Montreal, Canada,	Composition picture of skating scene.	
185	Frith, F., Reigate, Eng.,	Interior of Canterbury Cathedral.	Screen 24, W.
186	Blanchard, Val., London,	Photographic portrait.	Screen 25, W.
187	Blanchard, Val., London,	Photographic portrait.	Screen 25, W.
188	Valentine, James, Dundee,	Photograph, Balmoral Castle, and other views.	Screen 25, W.
189	Delden, E., Breslau,	Photo portraits.	Wall, alcove 24.
190	Levy, J., & Co., Paris,	Glass transparencies.	Main avenue.
191	Kiepert, H., St. Petersburg,	Photo portrait of Emperor William.	Screen 23, N.
192	Kiepert, H., St. Petersburg,	Photo portrait of Prince Bismarck.	Screen 24, N.

NO.	ARTIST.	TITLE.	LOCATION.
193	Mischenski, Dant- sic,	Variety of artistic photographs from life.	Screen 25, N.
194	Schaarwachler, J. C., Berlin,	Variety of artistic photographs.	Screen 25, E.
195	Ruckwardt, H., Berlin,	Architectural views.	Screen 25, E.
196	Loescher & Petsch, Berlin,	Variety of composition portraits.	Screen 23, W.
197	Kosler, J., Bad Lan- deck,	Architectural photographs.	Screen 23, W.
198	Jacobi, C. H., Coblentz,	Landscape views.	Screen 23, W.
199	Jacobi, C. H., Coblentz,	Views in printing-ink.	Screen 23, W.
200	Scholtz, Robert, Geerlitz,	Landscape photographs.	Screen 23, W.
201	Ritschel, G. A., Warbrunn,	Photographic portraits.	Screen 23, N.
202	Kiewning, E., Stet- tia,	Photographic portraits.	Screen 23, W.
203	Adele, Vienna,	Photographic portraits.	Screen 23, N.
204	Adele, Vienna,	Photographic portraits.	Screen 24, N.
205	Schulz & Suck, Carlsruhe,	Photographic portraits.	Screen 24, E.
206	Reichard & Lind- ner, Berlin,	Photographic portraits.	Screen 24, E.
207	Schwier, K., Wei- mar,	Copies of paintings.	Screen 24, E.
208	Heiler, E.,	Life-studies of the Cayuganga Indians.	Screen 24, E.
209	Braunack & Mey- ers, Mayence,	Photo mechanical prints.	Screen 24, E.
210	Rathenower, Ber- lin,	Optical and photo apparatus.	Wall, alcove 24.
211	Hertzog, J., Bre- men,	Photo chemicals.	Wall, alcove 24.
212	Obernetter, J. B., Munich,	Photo mechanical prints, bound in albums.	Wall, alcove 24.
213	Romell, Ph., Ber- lin,	Photographs illustrating the expedi- tion in Africa, 1873 and 1874.	Wall, alcove 24.
214	Henig, R., Berlin,	Photographic cards.	Wall, alcove 24.
215	Trapp & Munch, Friedberg,	Exhibitors of photographs and pho- tograph papers.	Wall, alcove 25.
216	Albert, J., Munich,	Photographs in printing-ink.	Screen 25, W.
217	Geldmacher, F.W., Frankfort,	Permanent photographs on various materials.	Screen 25, E.
218	Angerer, Munich,	Family groups.	Alcove 25.
219	Braun, A., Dornach,	View in the Alps.	Screen 24, W.
220	Naya, E., Venice,	View of Rome.	Screen 24, W.
221	Heid, Dr., Vienna,	Interior View of Horticultural House.	Screen 24, W.
222	Charaux, F., Ge- neva,	View in the Alps.	Screen 25, W.
223	Liebert, A., Paris,	Photographic portrait.	Screen 25, W.
224	Albert, J., Munich,	Oberammergau or Passionspiele.	Screen 25, W.
225	Delden, E., Breelan,	Photographic portraits.	Screen 25, E.
226	Reitmeyer, J., Mu- nich,	Large photographs from life.	Screen 24, W.
227	Wolf, Geo., Ham- burg,	Photographic portraits.	Wall, alcove 26.
228	Trapp & Munch, Friedberg,	Photographs on their make of albu- men paper.	Screen 24, W.
229	Cremer, J., Glad- bach,	Photographs in carbon.	Wall, alcove 25.
230	Schwier, K., Wei- mar,	Photograph of cartoon.	Wall, alcove 25.
231	Vidal, Léon, Paris,	Photo chromic prints.	Screen 23, E.
232	Walery, Paris,	Photographic portraits.	Screen 22, W.
233	Liebert, Paris,	Permanent photographs in carbon.	Wall, alcove 23.

NO.	ARTIST.	TITLE.	LOCATION.
234	Bray J. W., de Nice,	Landscape views.	Alcove 23.
235	Hutinet, D., Paris,	Specimens of photographers' cards.	Alcove 23.
236	Gillott, Paris,	Specimens of photo engraving.	Screen 23, E.
237	Auzerer, V., Vienna,	Large interior photographs.	Screen 22, E.
238	Stillfried, R. B., Yokohama,	Views in Japan.	Screen 22, E.
239	Largarjoli, F., Meran, Tyrol,	Views in the Tyrol.	Screen 22, E.
240	Wasservogel, S., Olmütz,	Studies of animals.	Screen 21, W.
241	Schodisch, Lud., Oberwarth,	Studies of animals.	Screen 21, W.
242	Luckhardt, F., Vienna,	Photographic portraits.	Screen 21, W.
243	Gertinger, J., Vienna,	Photographic portraits.	Screen 21, W.
244	Burckman, F., Munich,	Colored transparencies on glass.	Screen 21, W.
245	Luckhardt, F., Vienna,	Colored stereoscopic portraits.	Alcove 22, W.
246	Bogner, A., Munich,	Venus and Tannhauser.	Screen 21, N.
247	Ungar, J., Vienna,	Children's portraits.	Screen 21, E.
248	Rupperecht, M., Oldenburg,	Groups from life.	Screen 21, E.
249	Aubert, E., Christiania,	Photographic portraits.	Wall, alcove 22.
250	Knudsen, K., Bergen,	Landscape views.	Wall, alcove 22.
251	Knudsen, C., Christiania,	Portraits of ladies.	Wall, alcove 22.
252	Beernaert Frères, Ghent,	Photographic portraits.	Screen 20, W.
253	Pacheco, I., Rio de Janeiro,	Plain and colored photographs.	Screen 20, W.
254	Fidanza, F. A., Pará, Brazil,	Photographic portraits.	Screen 20, W.
255	Satyro, Pedro,	Colored miniatures.	Screen 20, W.
256	Sabino, J. T., Pará, Brazil,	Card photographs.	Screen 20, W.
257	Christiano, Jr., Buenos Ayres,	Card and cabinet photographs.	Screen 20, W.
258	Menson, T. B., Buenos Ayres,	Card and cabinet photographs.	Screen 20, W.
259	Petré, F., Buenos Ayres,	Colored photograph.	Screen 20, W.
260	Aguila, C. de, Buenos Ayres,	Photographic views.	Screen 20, W.
261	Proa, C., Buenos Ayres,	Photographic portraits.	Screen 20, W.
262	Posso, Aug., Oesti,	Photographic portraits.	Screen 20, W.
263	Bunge, E., Buenos Ayres,	Photographs of public buildings.	Screen 20, W.
263a	Souza, Silveira, Rio de Janeiro,	Colored miniatures.	Screen 20, W.
263b	Ferres, M., Rio de Janeiro	Geological photographs.	Screen 20, W.
263c	Verranzo, L., Rio de Janeiro,	Portraits and views.	Screen 20, W.
264	Geologica, C., Rio de Janeiro,	Photographic portraits.	Screen 20, W.
265	Wiklund, O., Westera, Sweden,	Composition groups and views.	Screen 20, E.
266	Bergh, E., Stockholm, Sweden,	Landscape.	Screen 20, E.
267	Winge, M. E., Stockholm, Sweden,	Copies of cartoons.	Screen 20, E.
268	Jager, J., Stockholm, Sweden,	Photographs of sculpture and paintings.	Screen 20, E.

NO.	ARTIST.	TITLE.	LOCATION.
269	Lundberg, W., Stockholm,	Photographic portraits.	Screen 20, E.
270	Osti, Henry, Up- sala, Sweden,	Photographic portraits.	Screen 20, E.
271	Sephje, L., Upsala, Sweden,	Photographic portraits.	Screen 20, E.
272	Campa, C. Y., Mex- ico,	Photographic portraits.	Screen 19, W.
273	Stillfried & Ander- son, Yokohama, Japan,	Native portraits and views.	Wall, alcove 20, S.
274	Tyasklewics, Count, Russia,	Portraits and views illustrating his travels in Africa, and taken there by his artist.	Wall alcove 19.
275	Bergomasco, St. Pe- tersburg,	Photographic portraits.	Screen 18, W.
276	Meczkowski, War- saw,	Photographic portraits.	Screen 18, W.
277	Brandel, Warsaw,	Photographic portraits.	Screen 18, W.
278	Kostrza, Warsaw,	Photographic portraits.	Screen 18, W.
279	Karelin, Warsaw,	Photographic portraits.	Screen 18, W.
280	Carbutt, John, Phil- adelphia,	Photo-lithograph reproductions.	Screen 13, E.
281	Bierstadt, E., New York,	Photographs, in printing-ink, by Al- bert's process.	Wall, N.W.
282	Mason, O. G., New York,	Photographs of the moon.	Wall, alcove 1, N.W.
283	Hirah, J. M., Chi- cago,	Specimens of relief plate engraving.	Wall, N.
284	Wenderoth, F. A., Philadelphia,	Specimens of photo engraving.	Screen 13, E.
285	Photo-Lithograph Co., New York,	Specimens of photo lithography.	Wall, N.
286	Osgood, J. R., & Co., Boston,	Photographs in printing-ink, by heliotype process.	Screen 13, E.
287	Ornamental Mirror Co., New York,	Photographs on mirrors.	Wall, N., alcove 4.

## NO. 110.—CENTENNIAL PHOTOGRAPHIC ASSOCIATION BUILDING,

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 150 feet by 30 feet.

The Photographic Association have erected a one-story frame building, located north of the Main Exhibition Building, on the east side of Belmont Avenue. It contains one room for the exhibition of photographs, and three rooms for photographers, for working purposes.

## OUT-DOOR WORKS OF ART.

### WINGED HORSES.

Owned by the FAIRMOUNT PARK COMMISSION.

In front of Memorial Hall are situated two bronze groups, each representing the mythological winged horse Pegasus; by the side of the one stands a figure emblematic of Music, and by the other a figure representing History. They were cast in Vienna, and purchased by the Park Commission.

### No. 12.—BARTHOLDI'S FOUNTAIN.

Architect, A. BARTHOLDI, of Paris.—Size, basin, 26 feet in diameter; height, 30 feet; statue, 11 feet.

Situated in the Esplanade, in front of the main entrance to the grounds; constructed of iron, bronzed, and was cast in Paris by A. Durenne. In the centre of the basin is erected a triangular pedestal, on the faces of which are aquatic monsters, and fishes spouting water. Upon the pedestal are three female Caryatides, supporting a basin thirteen feet in diameter, which receives the water from an upper basin upheld by three infant Tritons; the whole surmounted by a Mural Crown, through which the water flows. An illuminating apparatus is attached, in order to combine the effects of light and water. This fountain is intended to embody an allegorical representation of the elements Water and Light.

### No. 13.—CATHOLIC TOTAL ABSTINENCE FOUNTAIN.

Architect, HERMAN KIRN, Philadelphia.

Situated at the junction of Fountain Avenue and the Avenue of the Republic, at the northwestern corner of Machinery Hall. In design it is a circular platform, with four arms projecting at right angles, terminating in four smaller circular platforms. From the centre of the large circle rises a marble rockwork, sixteen feet high, with a diameter of eighteen feet at base, on which stands a statue of Moses smiting the rock. The water descends from numerous fissures into a basin forty feet in diameter. On each of the circular platforms is a drinking-fountain, twelve feet in height and eight feet eight inches in diameter, surrounded with statues, nine feet high. These represent Father Mathew, Charles Carroll, Archbishop John Carroll, and Commodore John Barry. It has been erected by contributions made by the numerous societies forming the Catholic Total Abstinence Union of America.

### No. 24.—THE AMERICAN SOLDIER.

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

A granite statue, designed for the Antietam Soldiers' Monument; is twenty-one feet six inches high, exclusive of the pedestal, and weighs thirty tons; it represents a soldier in the United States uniform, standing at rest, and is located in front of the north-central entrance of the Main Building, and opposite Memorial Hall.



**No. 292.—RUSTIC MONUMENT.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

A granite column, entwined with polished ivy, and surmounted by a cross; is situated southeast of Machinery Hall.

**No. 293.—MONUMENT.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

A small polished granite monument, surmounted by an urn; is located in front of the Board of Finance Office.

**No. 294.—GOTHIC MEMORIAL.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Made of Westerly granite, thirteen feet high, surmounted by a cross; is placed between the Bartholdi Fountain and the Board of Finance Office.

**No. 295.—MEMORIAL.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Built of granite, with polished tracery; is located southeast of Machinery Hall.

**No. 296.—POLISHED SCOTCH GRANITE MONUMENT.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Is seventeen feet high, surmounted by a circular dome, and placed between the Bartholdi Fountain and Machinery Hall.

**No. 297.—GOTHIC COLUMN AND PEDESTAL.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Granite work, with richly ornamented capitals, surmounted by a spire; is located in front of the Board of Finance Office.

**No. 298.—THE MINUTE-MAN OF '76.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

A marble statue, life size, on a pedestal seven feet high; situated southeast of Machinery Hall.

**No. 299.—GOTHIC FOUNTAIN.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Built of granite, seventeen feet high, surmounted by a cross, with four columns representing angels, with polished traceries; is located between the Board of Finance Office and Machinery Hall.

**No. 300.—CANOPY MONUMENT.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Is built of granite, forty feet high, crowned with a spire and cross; within is seated a figure representing Memory; is situated southeast of Machinery Hall, between it and the Board of Finance Office.

**No. 49 $\frac{1}{2}$ .—CORINTHIAN MONUMENT.**

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

Is located between Machinery Hall and the Board of Finance Office, southwest of the Bartholdi Fountain; is constructed of granite, forty-six feet high, and crowned with a statue of Hope.

**No. 50. — WASHINGTON.**

Exhibitor, M. DICKERSON EVER, Florence, Italy.

This statue is designed after Leutze's painting of "Washington Crossing the Delaware." It is of marble, heroic in size, being twelve feet high, and standing on a pedestal built of wood and Portland cement. It is situated south of, and directly in front of Judges' Hall.

**No. 52 $\frac{1}{2}$ .—THE HOWE MONUMENT.**

A bronze statue, life size, on a sandstone pedestal, erected by the Howe Sewing Machine Company to the memory of the late Elias Howe; situated near the western end of the lake.

**No. 80.—CHRISTOPHER COLUMBUS MONUMENT.**

A brown-stone statue of the discoverer; is located on the corner of Belmont and Fountain Avenues.

**No. 81.—DRINKING-FOUNTAIN.**

Exhibitors, SINGER & TALCOTT.

Constructed of limestone, with four pillars, square top, surmounted by an acorn; is situated on Fountain Avenue, between the Pennsylvania State Building and the Tunisian Café.

**No. 91.—BISHOP RICHARD ALLEN'S MONUMENT.**

Size, base, 6 feet by 6 feet; height, 16 feet.

Erected in memory of the Rev. Richard Allen, founder and first bishop of the African Methodist Episcopal Church; situated between Fountain and State Avenues, west of the United States Government Building.

**No. 145.—THE NAVY.**

Exhibitors, AMES MANUFACTURING COMPANY, Chicopee, Mass.  
LARKIN G. MEAD, Sculptor.

A bronze group, for the Lincoln Monument, Springfield, Illinois; located in front of Memorial Hall.

**No. 146.—THE DEAD LIONESSE.**

Owned by the FAIRMOUNT PARK COMMISSION.

A bronze group, cast by F. v. Müller, Munich; modeled by Prof. Wolf, Berlin; is situated between Memorial Hall and Photographic Hall.

**No. 180.—THE MOTT FOUNTAIN.**

Exhibitors, THE J. L. MOTT IRON WORKS, New York.

Constructed of iron, forty-five feet in diameter, and twenty-six feet high, with four figures at the base ; the top is surmounted by "Venus rising from the Sea ;" is situated east of Horticultural Hall.



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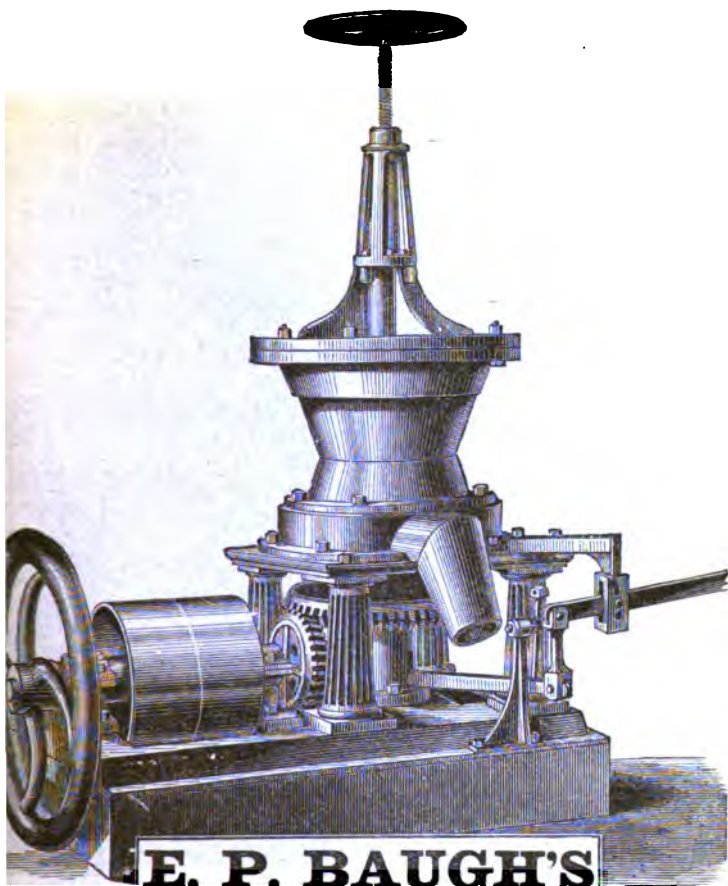
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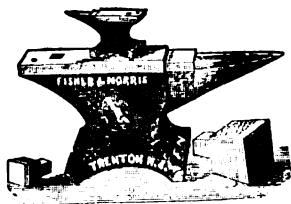
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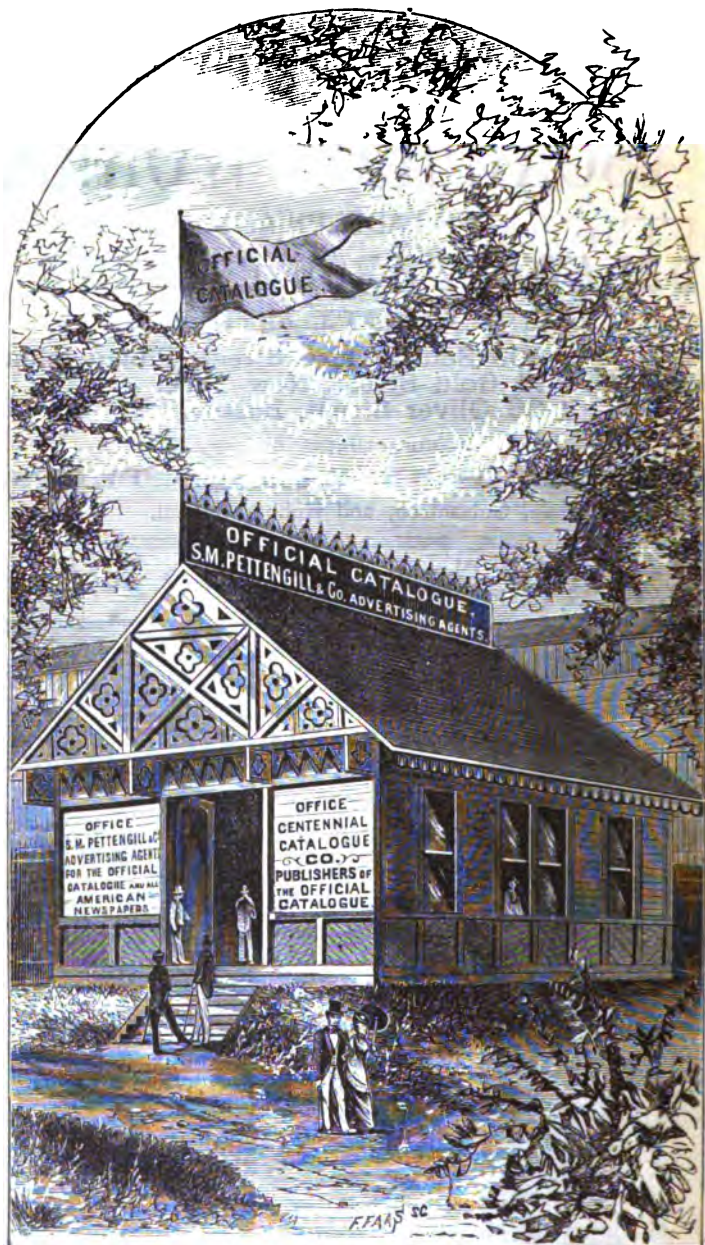
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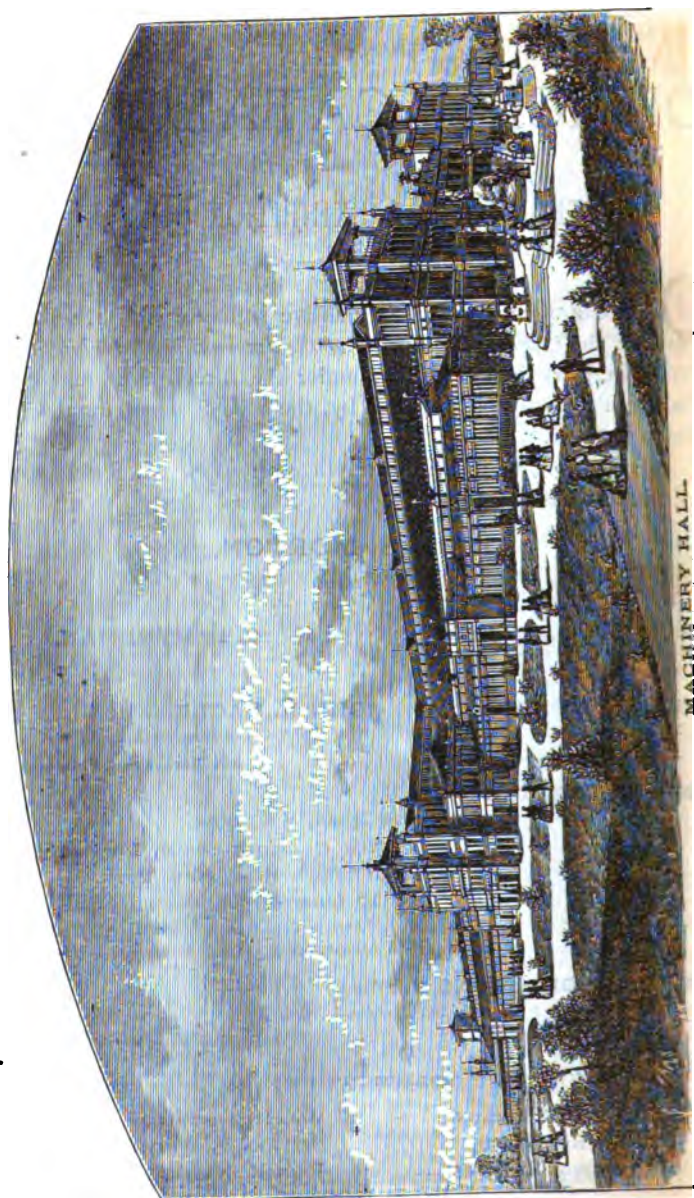
STEPHEN F. WHITMAN,

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JOSEPH HEILBRUN.

Office of the Company on Exhibition Grounds, Building No. 41, South  
of East end of Machinery Hall.





MACHINERY HALL

United States Centennial Commission.

INTERNATIONAL EXHIBITION.  
1876  
Official Catalogue.

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PART III.

MACHINERY HALL, ANNEXES, AND  
SPECIAL BUILDINGS.

DEPARTMENT V.—MACHINERY.

*REVISED EDITION.*

PHILADELPHIA:

*Published for the Centennial Catalogue Company*

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\* Railway plant, cars, etc., are largely exhibited in the Annex (No. 106) to the Main Building, Catalogue, Part I., page 374.

Note.—The Machinery of the following countries is installed wholly or in part in the Main Building, and catalogued in Part I., viz.:

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Tasmania.....	182	Chili.....	262
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## No. 20. MACHINERY HALL.

Size, 360 by 1402 feet; annex, 208 by 210 feet.

---

*Engineers and Architects, HENRY PETTIT, JOSEPH M. WILSON, Philadelphia.*

*Contractor, PHILIP QUIGLEY, Wilmington, Del.*

*Wrought and cast iron furnished by PUSEY, JONES, & Co., Wilmington, Del.*

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MACHINERY HALL is located west of the intersection of Belmont and Elm avenues, at a distance of 542 feet from the west front of the Main Exhibition Building, and 274 feet from the north side of Elm avenue. The north front of the building is upon the same line as that of the Main Exhibition Building, thus presenting a frontage of 3824 feet from the east to the west ends of the exhibition buildings upon the principle avenue within the grounds.

The principal portion of the structure is one story in height, showing the main cornice upon the outside at 40 feet from the ground, the interior height to the top of the ventilators in the avenues being 70 feet, and in the aisles 40 feet. To break the long lines upon the exterior, projections have been introduced upon the four sides, and the main entrances finished with facades, extending to 78 feet in height. The east entrance forms the principal approach from street-cars, from the Main Exhibition Building, and from the Pennsylvania Railroad depot. Along the south side are the boiler houses and other buildings for special kinds of machinery. The west entrance affords the most direct communication with George's Hill, which point affords the best view of the entire exhibition grounds.

The arrangement of the ground plan shows two main avenues 90 feet wide by 1360 feet long, with a central aisle between, and an aisle on either side. Each aisle is 60 feet in width; the two avenues and three aisles making the total width of 360 feet. At the centre of the building is a transept of 90 feet in width, which at the south end is prolonged beyond the Main Hall. This transept, beginning at 36 feet from the Main Hall and extending 268 feet, is flanked on either side by aisles of 60 feet in width, and forms the annex for hydraulic machines. The promenades in the avenues are 15 feet in width, in the transept 25 feet, and in the aisles 10 feet. All other walks extending across the building are 10 feet in width, and lead at either end to exit doors.

The foundations consist of piers of masonry. The superstructure consists of solid timber columns supporting roof trusses, constructed with straight wooden principals and wrought iron ties and struts. As a general rule, the columns are placed lengthwise of the building, at the uniform distance apart of 16 feet. The columns are 40 feet high to the heel block of the 90 feet span roof trusses over the avenues, and they support the heel of the 60 feet spans over the aisles at the height of 20 feet. The outer walls are built of masonry to a height of five feet, and above that are composed of glazed sash placed between the columns. Portions of the sash are movable

for ventilation. Louvre ventilators are introduced in continuous lengths over both the avenues and the aisles. The building is lit entirely by side light.

The motive power is furnished by a Corliss engine of 1400 horse power. There are eight main lines of shafting, extending almost the entire length of the structure, and countershafts are introduced into the aisles where needed. The hangers are attached at the height of 20 feet from the floor.

The annex for hydraulic machines contains a tank 60 feet by 160 feet, with depth of water of 10 feet. In this hydraulic machinery is exhibited in full operation. At the south end of this tank is a waterfall 35 feet high by 40 feet wide, supplied from the tank by the pumps upon exhibition.

The contract in the erection of Machinery Hall was made January 27th, 1875, and the building was begun forthwith, and finished October 1st, 1875. The cost was \$542,300. The exhibition area covers about 14 acres.

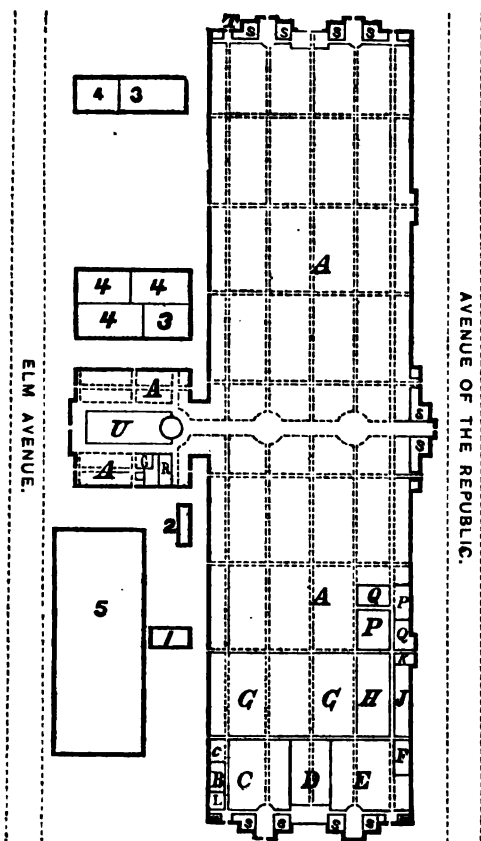
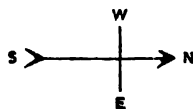
### KEY TO THE NOTATION.

THE location of objects in the Machinery Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to F—designate the successive ranges of columns, proceeding northward from the southern wall across the width of the building; the figures, the number of the column in each range, counting westwardly from the eastern wall, the entire length of the building, from 1 to 88. Thus C 5 is the column in the third range from the south, and the fifth from the eastern end of the building. The northwesternmost column is F 88.

The class of the classification (see page 13) to which each exhibit belongs is indicated by the small figures at the end of the line.

# MACHINERY HALL

Scale, 320 ft. to 1 in.



A United States.

B Austria.

C German Empire.

D Canada.

E France.

F Spain.

G Great Britain.

H Belgium.

J Sweden.

K Denmark.

L Italy.

P Brazil.

Q Russia.

R Switzerland.

S Restaurants, etc.

T Ladies' Waiting-room.

U Tank.

1. English Boiler-house.

2. Corliss Boiler-house.

3. Boiler-houses.

4. Machine Shop and Annex.

5. Shoe and Leather Shop.

Length, 1402 ft. Width, 360 ft. Height of Avenues, 70 ft. Height of Aisles, 40 ft.

# SYNOPSIS OF THE CLASSIFICATION.

LOCATION.	DEPARTMENTS.	CLASSES.	GROUPS.
MAIN BUILDING.	I. MINING AND METALLURGY.	100-109 110-119 120-129	Minerals, Ores, Stone, Mining Products. Metallurgical Products. Mining Engineering.
	II. MANUFACTURES.	200-205 206-216 217-227 228-234	Chemical Manufactures. Ceramics, Pottery, Porcelain, Glass, etc. Furniture, etc. Yarns and Woven Goods of Vegetable or Mineral Materials.
		235-241 242-249 250-257 258-264 265-271 272-279 280-284	Woven and Felted Goods of Wool, etc. Silk and Silk Fabrics. Clothing, Jewelry, etc. Paper, Blank Books, Stationery. Weapons, etc. Medicine, Surgery, Prothesis. Hardware, Edge Tools, Cutlery, and Metallic Products.
		285-291 292-296	Fabrics of Vegetable, Animal, or Mineral Materials. Carriages, Vehicles, and Accessories.
		300-309	Educational Systems, Methods, and Libraries.
		310-319 320-329	Institutions and Organizations. Scientific and Philosophical Instruments and Methods.
		330-339 340-349	Engineering, Architecture, Maps, etc. Physical, Social, and Moral Condition of Man.
	III. EDUCATION AND SCIENCE	400-409 410-419 420-429 430-439 440-449 450-459	Sculpture. Painting. Engraving and Lithography. Photography. Industrial and Architectural Designs, etc. Ceramic Decorations, Mosaics, etc.
		500-509	Machines, Tools, etc., of Mining, Chemistry, etc.
		510-519	Machines and Tools for working Metal, Wood, and Stone.
		520-529	Machines and Implements of Spinning, Weaving, etc.
		530-539	Machines, etc., used in Sewing, Making Clothing, etc.
		540-549	Machines for Printing, Making Books, Paper Working, etc.
MACHINERY BUILDING.	V. MACHINERY.	550-559 560-569 570-579 580-589	Motors, Power Generators, etc. Hydraulic and Pneumatic Apparatus. Railway Plant, Rolling Stock, etc. Machinery used in Preparing Agricultural Products.
		590-599	Aerial, Pneumatic, and Water Transportation. Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.
	VI. AGRICULTURE.	600-609 610-619 620-629 630-639 640-649	Arboriculture and Forest Products. Pomology. Agricultural Products. Land Animals. Marine Animals, Fish Culture, and Apparatus.
		650-662 665-669	Animal and Vegetable Products. Textile Substances of Vegetable or Animal origin.
		670-679 680-689 690-699	Machines, Implements, and Processes of Manufacture. Agricultural Engineering and Administration. Tillage and General Management.
	VII. HORTICULTURE.	700-709 710-719 720-729 730-739	Ornamental Trees, Shrubs, and Flowers. Hot Houses, Conservatories, Graperies. Garden Tools, Accessories of Gardening. Garden Designing, Construction, and Management.



# CLASSIFICATION.

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## DEPARTMENT V.—MACHINERY.

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### MACHINES, TOOLS, AND APPARATUS OF MINING, METALLURGY, CHEMISTRY, AND THE EXTRACTIVE ARTS.

- CLASS 500.—Rock drilling.  
CLASS 501.—Well and shaft boring.  
CLASS 502.—Machines, apparatus, and implements for coal cutting.  
CLASS 503.—Hoisting machinery and accessories.  
CLASS 504.—Pumping, draining, and ventilating.  
CLASS 505.—Crushing, grinding, sorting, and dressing. Breakers, stamps, mills, pans, screens, sieves, jigs, concentrators.  
CLASS 506.—Furnaces, smelting apparatus, and accessories.  
CLASS 507.—Machinery used in Bessemer process.  
CLASS 508.—Chemical manufacturing machinery. Electroplating. Paint and powder mills. Blacking and soap-making machinery.  
CLASS 509.—Gas machinery and apparatus.

### MACHINES AND TOOLS FOR WORKING METAL, WOOD, AND STONE.

- CLASS 510.—Planing, sawing, veneering, grooving, mortising, tonguing, cutting, moulding, stamping, carving, and cask-making machines, etc., cork-cutting machines.  
CLASS 511.—Direct acting steam sawing machines, with gang saws. Bark mills.  
CLASS 512.—Rolling mills, bloom squeezers, blowing fans. Rivet, nail, bolt, and tack making machinery.  
CLASS 513.—Furnaces and apparatus for casting metals, with specimens of work.  
CLASS 514.—Steam, trip, and other hammers, with specimens of work, anvils, forges, bellows.  
CLASS 515.—Planing, drilling, slotting, turning, shaping, punching, stamping, cutting, and coining machines. Wheel cutting and dividing machines, emery wheels, drills, taps, gauges, dies, etc. Grindstones.  
CLASS 516.—Stone-sawing and planing machines, dressing, shaping, and polishing, sand blasts, Tilghman's machines, glass-grinding machines, etc.  
CLASS 517.—Brick, pottery, and tile machines. Machines for making artificial stone.  
CLASS 518.—Furnaces, moulds, blowpipes, etc., for making glass and glassware.  
CLASS 519.—Tools, implements, etc., for working metal, wood, and stone.

### MACHINES AND IMPLEMENTS OF SPINNING, WEAVING, FELTING, AND PAPER MAKING.

- CLASS 520.—Machines for the manufacture of silk goods.  
CLASS 521.—Machines for the manufacture of cotton goods.  
CLASS 522.—Machines for the manufacture of woolen goods, carpets, and tapestry.  
CLASS 523.—Machines for the manufacture of linen goods.

CLASS 524.—Machines for the manufacture of rope and twine, and miscellaneous fibrous materials.

CLASS 525.—Machines for the manufacture of paper and felting.

CLASS 526.—Machines for the manufacture of india-rubber goods.

CLASS 527.—Machines for the manufacture of mixed fabrics.

CLASS 528.—Machines for the manufacture of wire cloth.

**MACHINES, APPARATUS, AND IMPLEMENTS USED IN SEWING AND MAKING CLOTHING AND ORNAMENTAL OBJECTS.**

CLASS 530.—Machines used in the manufacture of lace, floor-cloths, fancy embroidery, hair, ribbons, etc.

CLASS 531.—Sewing and knitting machines, clothes, corset, hat, and bonnet making machines.

CLASS 532.—Machines for preparing and working leather.

CLASS 533.—Machines for making boots and shoes.

CLASS 534.—Machines for ironing, drying, scouring, and cleaning.

CLASS 535.—Machines for making clocks and watches.

CLASS 536.—Machines for making jewelry.

CLASS 537.—Machines for making buttons, pins, needles, etc.

CLASS 538.—Pipes for smoking.

**MACHINES AND APPARATUS FOR TYPESETTING, PRINTING, STAMPING, EMBOS-  
ING, AND FOR MAKING BOOKS, AND PAPER WORKING.**

CLASS 540.—Printing, stamping, embossing, and lithographing presses.

CLASS 541.—Typecasting machines, apparatus of stereotyping.

CLASS 542.—Types and typesetting machines. Type-writing machines.

CLASS 543.—Printers' furniture.

CLASS 544.—Bookbinding machines.

CLASS 545.—Paper-folding machines.

CLASS 546.—Paper and card cutting machines, paper box machines.

CLASS 547.—Envelope machines.

**MOTORS AND APPARATUS FOR THE GENERATION AND TRANSMISSION OF POWER.**

CLASS 550.—Boilers and all steam or gas generating apparatus for motive purposes.

CLASS 551.—Water-wheels, water engines, hydraulic rams, windmills.

CLASS 552.—Steam, air, or gas engines, electro-magnetic engines.

CLASS 553.—Apparatus for the transmission of power, shafting, belting, cables, transmission of power by compressed air, etc., gearing, cables.

CLASS 554.—Screw propellers, wheels for the propulsion of vessels, and other motors.

CLASS 555.—Implements and apparatus used in connection with motors, steam gauges, manometers, etc. Anti-friction metals.

**HYDRAULIC AND PNEUMATIC APPARATUS, PUMPING, HOISTING, AND LIFTING.**

CLASS 560.—Pumps and apparatus for lifting and moving liquids.

CLASS 561.—Pumps and apparatus for moving and compressing air or gas.

CLASS 562.—Pumps and blowing engines, blowers and ventilating apparatus.

CLASS 563.—Hydraulic jacks, presses, elevators, lifts, meters, cranes.

CLASS 564.—Fire engines, hand, steam, or chemical, and fire extinguishing apparatus, hose, ladders, and fire-escapes, etc.

CLASS 565.—Beer engines, soda-water machines, bottling apparatus, corking machines.

CLASS 566.—Stop valves, cocks, pipes, etc.

CLASS 567.—Diving apparatus and machinery.

CLASS 568.—Ice machines.

**RAILWAY PLANT, ROLLING STOCK, AND APPARATUS.**

CLASS 570.—Locomotives, models, drawings, plans, etc.

CLASS 571.—Carriages, wagons, trucks, cars, etc. Scales.

- LASS 572.—Brakes, buffers, couplings, and snow-plows.
- LASS 573.—Wheels, tires, axles, bearings, springs, etc.
- LASS 574.—Permanent ways, ties, chairs, switches, etc.
- LASS 575.—Station arrangements, signals, water-cranes, turn-tables.
- LASS 576.—Miscellaneous locomotive attachments.
- LASS 577.—Street railways and cars.

#### MACHINES USED IN PREPARING AGRICULTURAL PRODUCTS.

- LASS 580.—Flour mills.
- LASS 581.—Sugar refining machines.
- LASS 582.—Confectioners' machinery.
- LASS 583.—Oil-making machinery.
- LASS 584.—Tobacco manufacturing machines.
- LASS 585.—Mills for spices, coffee, etc.
- LASS 586.—Machines for preparing fancy goods.
- LASS 587.—Machines for preparing malt and spirituous liquors.

#### AERIAL, PNEUMATIC, AND WATER TRANSPORTATION.

- LASS 590.—Suspended cable railways.
- LASS 591.—Transporting cables.
- LASS 592.—Balloons, flying machines, etc.
- LASS 593.—Pneumatic railways, pneumatic dispatch.
- LASS 594.—Boats and sailing vessels. Sailing vessels used in commerce. Sailing vessels used in war. Yachts and pleasure boats. Rowing boats of all kinds. Life boats and salvage apparatus, with life rafts, belts, etc. Submarine armor, diving bells, etc. Ice boats. Models and drawings.
- LASS 595.—Steamships, steamboats, and all vessels propelled by steam.
- LASS 596.—Vessels for carrying telegraph cables and railway trains, also coal barges, water boats, and dredging machines, screw and floating docks, and for other special purposes.
- LASS 597.—Steam capstans, windlass, deck-winches, and steering apparatus, fans.

#### MACHINERY AND APPARATUS ESPECIALLY ADAPTED TO THE REQUIREMENTS OF THE EXHIBITION.

Boilers, engines, cranes, pumps, etc.

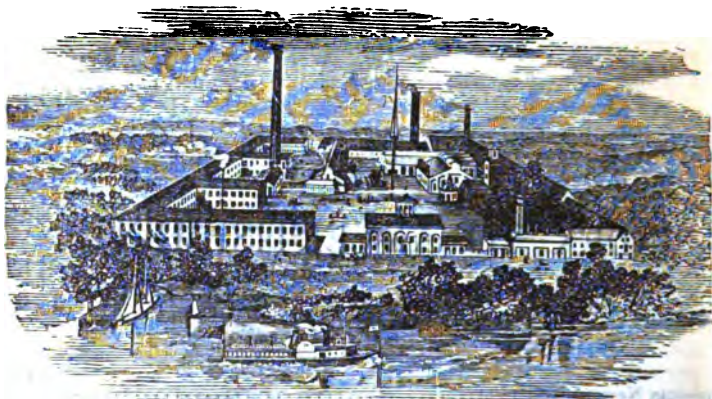


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**NOTICE TO COTTON AND WOOLEN MANUFACTURERS.**



## **THE BRIDESBURG MANUFACTURING COMPANY**

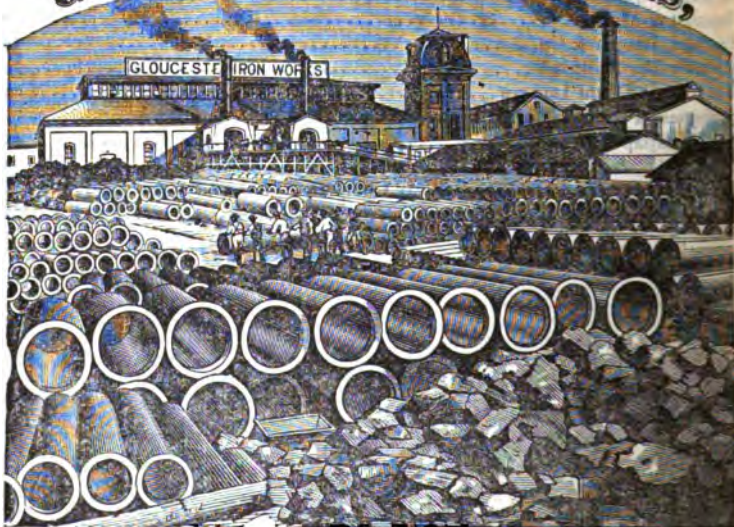
**Offices, 65 and 67 North Front Street, Philadelphia,  
IS THOROUGHLY REORGANIZED.**

It builds none but the best machinery. It builds machinery strictly to specifications. It puts any of its machinery in on competition. It furnishes machinery in contract time, under forfeiture. It furnishes repairs promptly and at moderate prices. It can build ten Looms a day. It can build ten Spinning Frames a week. It can build five sets of Cards in a fortnight. It can build five self-acting Mules in a month. It can build Hand Mules, Cotton Cards, Twisters, Drawing Frames, Railway Heads, Pickers, Feeders, Renovators, Bobbin Winders, Beaming Machines, Warping Mills, Spreaders, Reels, &c., in any quantity required. It asks no pay until efficiency is demonstrated. It quotes low prices, and uniform to all.

David S. Brown, Pres't,  
Benj. Chew, Treas.

Geo. P. Michelson, Sec'y,  
Wm. Saxton, Sup't.

## **GLOUCESTER IRON WORKS,** GLOUCESTER CITY, NEW JERSEY.



**Cast Iron Gas & Water Pipes, Stop Valves, Fire Hydrants, Gas Holders, &c.**  
**Office, Philadelphia, No. 6 North Seventh St.**

## DEPT. V.—MACHINERY.

## UNITED STATES.

## Mining Machinery, Drills.

**Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.**

- 1 Waring Rock Drill Co., New York, N. Y.—Mining, quarrying, and tunneling drills. A 54. 500
- 2 Pennsylvania Diamond Drill Co., Pottsville, Pa.—Prospecting drill, quarry drill, and samples of cores, continuous cylindrical sections of rock and mineral strata, bored out to any depth, and furnished; therefore, is a perfectly reliable method of proving mineral lands. Artesian wells bored of any size and depth. A 55. 500
- 3a Beamisdarfer & Eby, Campbells-town, Pa.—Rock-drilling machine. (*Annex 2.*) 500
- 2b Union Rock Drill Co., New York, N. Y.—Rock drills. A 60. 500
- 2c American Diamond Rock Boring Co., Providence, R. I.—Diamond-pointed rock drills. A 54. 500
- 3 Gardiner Drill Co., New York, N. Y.—Rock-drilling machines and appliances for operating in mines and quarries. A 55. 500
- 4 Weaver, W., Phoenixville, Pa.—The Victor rock drill. Two men with this machine will do the work of six by hand. It drills holes from half an inch to six inches in diameter to any depth and at any angle required. Price for machine driven by hand, \$250; by steam, \$750. A 55. 500
- 5 Igersoll Rock Drill Co., New York, N. Y.—Steam or compressed air rock-drilling machine. A 60-61. 500
- 6 Bolles, J. N., Baltimore, Md.—Machinery for boring artesian wells, in operation. (*Outside of building.*) 501
- 6a Mowbray, George M., North Adams, Mass.—Electric batteries and exploders. A 59. 501
- 6b Randolph, Theodore F., Morristown, N. J.—Ditcher and excavator. C 77. 501
- 6c Roberts, E. A. L., Titusville, Pa.—Oil well torpedo. C 78. 501
- 6d Robinson, John E., Boston, Mass.—Sand and air chamber and artesian well. (*Annex 3.*) 501
- 7 Bolles, Jesse N., Baltimore, Md.—Boring machinery for artesian wells. A 56. 501
- 8 Melvin & McMorris, Philadelphia, Pa.—Artesian well, drilling and pumping. (*Outside of building.*) 501
- 9 Pierce, Charles D., Peru, La Salle Co., Ill.—Well boring and prospecting machine. One man and horse can bore 20 feet per hour. Bores any size or depth. Boulders, hard-pan, and quicksand easily handled. Has an established reputation in every State and Territory. \$25 per day is made with one machine. Agents wanted in every county, also in foreign countries. Illustrated catalogue sent free on application. Address as above. (*Outside of building.*) 501
- 10 Monitor Coal Cutter Co., Brasil, Ind.—Compressed air coal-cutting machine. A 58. 502
- 11 Hunt, Chas. W., New York, N. Y.—Machinery for unloading vessels and storing cargoes. A 56. 503
- 12 Sternbergh, James Hervey, Reading, Pa.—Surface emery-grinding machine. B 37. 505
- 13 Blake Crusher Co., New Haven, Conn.—Machine for crushing ores, stones, etc. Extensively used for breaking stone for MacAdam roads, ballasting railroads, and for concrete. In mining operations, for the rapid and economical crushing of ores of all kinds, it has a world-wide reputation. A 58 and A 63. 505
- 14 Fulton Foundry Co., Cleveland, O.—Turn-table. A 58-59. 505
- 14a Krom, S. R., New York, N. Y.—Ore and laboratory separator; ore crushers. A 60. 505
- 15 Kreider, Campbell, & Co., Philadelphia, Pa.—E 50-51. 505  
a Mineral mill. 505  
b Paint mills, paint mixer. 508
- 16 Coxe Bros. & Co., Jeddo, Pa.—Working model of coal breaker. A 63. 505
- 17 Baugh & Sons, Philadelphia, Pa.—Mills for crushing and grinding minerals, bones, etc. A 61-62. 505
- 18 State of Nevada, Gold Hill, Nevada.—Quartz mill. (*South of Machinery Hall.*) 505
- 19 Poole & Hunt, Baltimore, Md.—Fertilizer and paint mixer. C 79. 505
- 20 Bradford, H., Philadelphia, Pa.—Coal and ore separator. This machine separates all solid substances that differ in specific gravity, and from the smallest particles to four inches in size. For sale by H. Bradford, room 26, Merchants' Exchange, corner Third and Walnut streets, Philadelphia. A 73. 505
- 21 Albright & Stroh, Mauch Chunk, Pa.—Coal jig for separating slate from coal, etc. B 19. 505

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-25.

## Mining, Chemical, Gas Machinery.

- 22 Ball, Edwin P., Chicopee, Mass.—Steam stamping machine for crushing ores and minerals. (*Annex 3.*) 505
- 23 Bowron, William M., Philadelphia, Pa.—Waste house, fire grates, blast furnace, hot blast stoves. A 57. 506
- 24 Koenigsberg, J., Lock Haven, Pa.—Model of coke oven and discharging machine. A 57. 506
- 25 Welmer, P. L., Lebanon, Pa.—Charging apparatus for blast furnaces, blast furnace fixtures. B 69. 506
- 26 Edgemoor Iron Co., Edgemoor, Del.—Rotary puddler, hydraulic forged eye-bars, wrought and cast iron work for Main Exhibition Building. C 22. 506
- 26a Caldwell & Mather, Philadelphia, Pa.—Melting furnace. (*Annex 1.*) 506
- 26b Manes, James, sr., New Haven, Conn.—Revolving globe furnace for smelting gold and silver ores, etc. A 57-58. 506
- 26c Baker, Charles H., Philadelphia, Pa.—Self-gauging Bessemer tuyeres. (*Annex 2.*) 507
- 27 Tully, John W., Industrial Paint, Varnish, and Filler Works, Twentieth and Parrish streets, Philadelphia, Pa.—Paints and varnishes, scraper filling, Belgian varnish filler, American paint filling, Roman filler, iron priming and finishing paint, lubricating paste, wood filling, and French washing blue. A 67. 508
- 28 Bryan & Snyder, Philadelphia, Pa.—Manufacture of silver-plated ware. A 66. 508
- 29 Zindgraf & Hohenadel, 215 Race street, Philadelphia, Pa.—Machine for grinding and mixing paint. Manufacturers of machinery for grinding and mixing paint. Also mills for grinding drugs, spices, etc. Our mills are made with an improved stand for adjusting upper stone. A 66. 508
- 30 Fichtenberg, Werner, New York, N. Y.—Insect powder, exterminating powders and papers, powder bellows, bird lime. A 66. 508
- 31 Reeves, John W., Philadelphia, Pa.—Soap cutting machine. A 67. 508
- 31a Condit, Hanson, & Van Winkle, Newark, N. J.—Electro-plating machine. Condit, Hanson & Van Winkle, 236 Market street, corner Mulberry, Newark, N. J., exhibit the "Weston-Dynamo Electric Machine," doing electro, nickel, silver, gold, and copper plating. The machine is simple, easy to manage, requiring scarcely any attention. It is strong, durable, compact, reliable, powerful, and requires but little force to run it. It is a self-regulator, automatically adjusting the current to the amount of work done. From the great force obtained from a small amount of material, and the simplicity of its construction, the machines are sold at very low prices, \$75 and upwards. The conversion of motion into electricity and its use for the electro deposition of the metals, etc., is of great importance, as it not only avoids the use of expensive materials and the deleterious and corrosive fumes produced by batteries, but saves a great deal of time, and the current is more uniform than can be obtained by the use of batteries. B 73. 508
- 32 King, Wm. H., Philadelphia, Pa.—Soap press. A 66. 508
- 33 Hagner Drug Milling Co., Philadelphia, Pa.—Double run flaxseed churning mills. A 64. 508
- 34 Mosser, W. F., & Co., Allentown, Pa.—Bark mill, with independent grinding segments. A 48 and *Pump annex.* 508
- 35 Carr Calvin, & Co., Cleveland, O.—Galvanized iron circular cornice machinery. Owners of all circular machine and nearly all the brake and folding machine patents. See circular. B 68. 508
- 35a Averill Chemical Paint Co., New York, N. Y.—Paint, all colors, ready for use. (*Outside of building.*) 508
- 35b Wyman, L. A., Boston, Mass.—Ink and paint mill. A 66. 508
- 36 Wallace & Sons, Ansonia, Conn.—Magneto-electric machines, for propulsion of metals and for electric light, proprietors of brass and copper rolling mills, Ansonia, Conn., office and warehouse 89 Chambers and 71 Reade streets, New York. Manufacturers of brass, rolled and in sheets, copper rivets and burs, brass and copper tubing, brass and copper wire, brass door rail, brass and iron jack chains, stair rods, copper tacks and nails, bracers, bolt and sheathing copper, etc., kerosene burners and trimmings. Price lists, with discount, furnished on application. A 67. 508
- 36a Towsley, L. D., & Co., Philadelphia, Pa.—Gas utilizer for manufacturing illuminating gas. A 65. 509
- 36b Gilbert & Barker Manufacturing Co., Springfield, Mass.—Gas machine. A 77. 509
- 36c Eichholt, John H., Greenpoint, L. I., N. Y.—Gas generator. A 67. 509
- 36d Patton, J. Desha, Norristown, Pa.—Cylinder, governor, etc. C 27. 509
- 36e McIlhenny, George A., Washington, D. C.—Door for gas retorts. C 27. 509
- 36f Hickman, Towsley, & Swan, St. Louis, Mo.—Gas utilizer for manufacturing illuminating gas. A 65. 509
- 36g Thomsen, Alexander, Worcester, Mass.—Governor for gas. C 27. 509
- 36h Day, George H., Haverhill, Mass.—Lime hurdles and screens. C 27. 509
- 38 Goodwin, Wm. W., & Co., 1018 Filbert street, Philadelphia, Pa.—Gas meters of all descriptions, station meters, standard cubic foot measures and provers, photometers of all kinds, candle scales, pressure registers and gauges, pressure and vacuum registers, apparatus for determination of sulphur and ammonia in coal gas, density and specific gravity apparatus, etc. A 80. 509
- 38a Walker, James H., Milwaukee, Wis.—Model of gas works. C 27. 509
- 38b Towsley, L. D., Cincinnati, O.—Gas utilizer for manufacturing illuminating gas, and for saving one-half the coal-gas of cities. It is automatic, safe, durable, simple, and cheap. A 65. 509
- 39 Morris, Tasker, & Co., Philadelphia, Pa.—Gas-works machinery. A 70 and C 27. 509
- 40 Harris, Griffin, & Co., Philadelphia, Pa.—Gas meters, registers, gauges, photometers, provers, pumps, exhaust governors. A 78. 509



## Gas Machines, Wood-working Machinery.

- 41 Mervine, Samuel P., Jr., Philadelphia, Pa.—Gas regulator. A 73. 509
- 41a Automatic Gas Governor Co. of the U. S., Philadelphia, Pa.—Automatic gas governor. A 73. 509
- 41b Rand, A. W., Philadelphia, Pa.—Gas machine. A 71. 509
- 42 Rex & Bockius, Philadelphia, Pa.—Illuminating gas generator. C 69. 509
- 43 Excelsior Gas Machine Co., South Norwalk, Conn.—Gas machine. A 75. 509
- 44 Improved Steiner Gas Machine Co., Philadelphia, Pa.—Portable gas machines. A 75. 509
- 45 Walworth Manufacturing Co., Boston, Mass.—Gas machines for lighting country residences, public buildings, etc. A 76, E 75, and B 41. 509
- 46 Imperial Manufacturing Co., New York, N. Y.—Gas machines. A 73. 509
- 47 Tiffany, J. C., Boston, Mass.—Oil gas generator, dry gasometer, process for removing naphthaline in gas conduits, platinum appliance for combustion of coal in furnaces. (*Outside of building.*) 509
- 48 Vasquez, Chas. L., Philadelphia, Pa.—Automatic gas machine. A 73. 509
- 49 Starr, Jesse W., & Son, Camden, N. J.—Gas works, pipe. (*Outside of building.*) 509
- 50 Novelty Gas Machine Co., Baltimore, Md.—Carburetting gas machine. A 73 and *outside of building.* 509
- 51 Gruber, John P., Jersey City, N. J.—Gas works. A 52. 509
- 52 Bean, Joseph H., Cincinnati, O.—Automatic gas machine for residences, churches, etc. A 72. 509
- 53 American Meter Co., New York and Philadelphia.—Standard provers, meters, pressure registers, gauges, exhaust governors, bar and jet photometers; also, analytical apparatus generally. A 69. 509
- 54 Burr, William H., Philadelphia, Pa.—Apparatus for making hydro-carbon gas. A 68. 509
- 55 Excelsior Gas Machine Co., South Norwalk, Conn.—Retort gas machine. A 75 and *outside of building.* 509
- 56 Daschbach, E. J., Pittsburg, Pa.—Gas machine, with automatic carburetter. A 72. 509
- 57 Ramsey, Robert H., Pottsville, Pa.—Bituminous coal gas machine, adapted to private residences, stores, and manufactories. Furnishes coal gas of largely increased illuminating power, at less than one dollar per thousand feet. Indorsed by insurance underwriters. A 72. 509
- 57a Rowland, T. F., Greenpoint, N. Y.—Specimens of forgings; model of steam stoker. A 69 and D 31. 509
- 58 Lane & Bodley, Cincinnati, O.—Stroke power mortisers. A 50 and *saw-mill.* 510
- 58a Gerlach, Peter, & Co., Cleveland, O.—Stave-sawing machine. A 34. 510
- 58b Andrews, E., Williamsport, Pa.—Saw-sharpener, cross-cut saw handler, saws, gang-saw, hooks and stirrups, etc. B 78. 510
- 58c Palmer, Samuel R., Belfast, Me.—Stave-jointing machine. A 22. 510
- 58d Atkins, E. C., & Co., Indianapolis, Ind.—Saws. B 5 and A 5. 510
- 58e Knowlton, John L., Sharon Hill, Pa.—Saws, saw-sharpener and planer knife, and grinding machine. A 1 and B 1, and *saw-mill.* 510
- 58f Stranges Cylinder Saw & Machine Co., Taunton, Mass.—Cylinder-saw stave machine; foot lathe. B 74. 510
- 58g Curtis & Co., St. Louis, Mo.—Slotted circular saw. B 79. 510
- 58h Ames & Frost, Chicago, Ill.—Dove-tailing machine. B 61. 510
- 59 Norris, W. R., Fort Ann, N. Y.—Diagonal planing and polishing machine. B 60. 510
- 59a Bureka Manufacturing Co., Boston, Mass.—Lathe, scroll saw, scroll saw attachment. B 36-37. 510
- 59b Havens, W. H., Paterson, N. J.—Iron circular saw tables. B 56. 510
- 59c Trump Bros., Wilmington, Del.—Foot-power scroll saws. B 57. 510
- 59d Burk, Wm. B., & Co., Philadelphia, Pa.—Cork-cutting machines, cork-tapering machine. B 60. 510
- 59e Dowling, T. W., Detroit, Mich.—Scroll saw. B 61. 510
- 59f Barnes, W. F. & John, Rockford, Ill.—Scroll and circular saws; lathes. B 57. 510
- 59g Russell, S. J., Chicago, Ill.—Wood lathes. B 56. 510
- 59h Providence Saw Works, Providence, R. I.—Jig-sawing machines. B 56. 510
- 59i Buss, Charles, & Sons, Marlboro', N. H.—Rotary bed, panning, planers, band saw, lathes, slotter, splitter, cutting-up machines. B 49. 510
- 59j Firat & Prybil, New York, N. Y.—Re-slitting band saw, carving machine, saws, planers, etc., for wood working. B 43. 510
- 59k Diaston, Henry, & Sons, Philadelphia, Pa.—Saws and saw tools, trowels, carpenters' tools, files, knives, butt hinges, sheet steel. B 41-46. 510
- 59l Baxter, C. M., Lebanon, N. H.—Band saws; planer. B 64. 510
- 59m Forester, Benjamin, Salem, Oregon.—Wood auger. D 68. 510
- 59n Walker Bros., Philadelphia, Pa.—Wood working machinery. B 53. 510
- a No. 0. Scroll sawing machine, even tension spring, adjustable fastenings for saw blades and combined belt shifter and brake.
- b No. 1. Scroll sawing machine—spring, has even tension, combined clamp fastening for saw blades; lower guides have parallel adjustment and the dust from saw is

## Machines and Tools for Working Metal, Wood, and Stone.

- 58 Morthé Bros., Philadelphia, Pa.—Mortising machines. E 54. 510
- 59 Douglass Manufacturing Co., Seymour, Conn.—Mechanics' edge tools and boring implements. A 41. 510

## Wood-working Machinery.

- blown away from the slides by a fan blower attached.
- c Power-feed panel raiser, for panels of any width or raise or thickness; has upright spindles and heads, swing table and, adjustable guards. 510
- 70 Wallace & Keller, Philadelphia, Pa.—Turning lathe. B 67. 510
- 71 Crossley, Harry A., Cleveland, O.—Stair jointer. B 67. 510
- 72 Silver & Deming Manufacturing Co., Salem, O.—Hub boxing machines, adjustable hollow auger, spoke tenoning machines. B 66 and F 54. 510
- 73 Graham, J. S., & Co., Rochester, N. Y.—Planing, tonguing, and grooving machines, circular re-sawing machine, moulding machine, matching heads, and cutters. B 44. 510
- 74 Moseley, Jerome S., Syracuse, N. Y.—Scroll saw machine, boring machine. In all of the wood-sawing machines on exhibition, the great principles involved in their mechanical construction are the many devices for starting, stopping, and controlling its speed without taking the attention of the operators from their work. The manner of holding the saw, and the manner of giving the saws more or less "rake or feed," have been the difficult problems to solve. Moseley's Patent Eureka Scroll Sawing Machine, with its improved apparatus, can be run at a speed from 800 to 1100 revolutions per minute, and will saw the lightest veneered work, such as piano or melodeon work, and is capable of running saws from one-sixteenth of an inch wide to any width that can be practically used in a scroll saw machine. The blower and self-adjusting blowpipe is a new feature, which adds greatly to the convenience of running and working this machine. It is attached in a simple manner to the upright shaft in which the saws are worked, and serves every purpose of blowing gently away from the work all sawdust that accumulates. The machine is admirably adapted for all kinds of scroll sawing, from the lightest to the heaviest, and does the work well. This machine received the first prize medal at the fair of the New York State Agricultural Society, held at Utica in the fall of 1870; also at Elmira, 1872; also at Albany, 1873, and at Rochester, 1874; also received a medal of special award at the Fair of the American Institute, held at New York city in 1872; and the first prize medal at the International Exhibition, Buffalo, N. Y., 1872. B 63. 510
- 75 Griffiths, John W., New York, N. Y.—Wood bending machines. B 74 and E 5. 510
- 76 Battle Creek Machinery Co., Battle Creek, Mich.—Carving, paneling, variety moulding, and dovetailing machine; moulders' solid steel cutters. B 55. 510
- 77 Lane Manufacturing Co., Montpelier, Vt.—Portable single circular saw mill, designed for common use as a portable saw mill, and also intended for use in fixed establishments of ordinary capacity. Sawyer sets the log, uprights both receded, and when desired, advanced, by power; dogging devices especially adapted for "live" or "through-and-through" sawing, and for holding frozen logs. Gauge roll (Fairbank's patent) in front of saw; tapering devices, elevated scale or rule. Over 2000 of these mills (Lane's patent) in use. Heavy double circular saw mill, intended for first-class establishments of the largest capacity; 72 inch lower saw and 40 inch upper saw, feed and jiggling back works, operated from either front or back side of frame; saw-guide quickly removable; uprights advanced by both forward and backward motions of lever; setter rides on carriage; rolled-steel headblocks; improved dogs catch under and upper sides of logs, and swing away from saw when released; up-rights receded or advanced by power. (*Saw Mill Building*); 24 inch traveling-bed or "Farrar," planing machine; 18 inch stationary bed or roll-fed planing machine; heavy matching, or tonguing and grooving machine; light matching, or tonguing and grooving machine. A 35. 510
- 78 Marston, J. M., 6 Taber St., Boston, Mass.—Combined hand and foot circular sawing, boring, and mitreing machines. E 77. 510
- 78a Holmes, James, Belfast, Me.—Machine for jointing staves. B 77. 510
- 78b Chesney, R. M., Philadelphia, Pa.—Scroll saw and wood-jointing machine; process shown. A 44-46. 510
- 78c Boynton, Eben B., New York, N.Y.—Saws, frames, sets, files, handles, etc. B 41. 510
- 79 Chase Turbine Manufacturing Co., Orange, Mass. (*Saw Mill annex.*)  
a Machine for sawing staves, spool stock, box boards, etc. 510  
b Loverset and circular saw mill. 511
- 80 Beach, Henry Lloyd, Montrose, Pa.—Scroll-sawing machines. There is no class of machinery on exhibition that attracts greater attention than the scroll sawing machines. Among the number that possess merits as to their mechanism are the two manufactured by Henry L. Beach, of Montrose, Pa. The No. 2, which is mostly of wrought iron, insuring great strength and durability, is especially noticeable; instead of the ordinary tight and loose pulley, the crank shaft carries a friction pulley, by which the saw is made to start and stop instantly without shifting the belt—a great saving of time on inside work. Both the Nos. 1 and 2 are provided with saw clamps, and very powerful and elastic spring, which give an even tension on the saw of from 10 to 75 lbs. No. 1 has a tilting table, which for pattern work is indispensable, and is used almost daily in any shop. Both the machines have air pumps, steel bearing for each saw, and are adjustable in every part to take up all lost tension. A 29. 510
- 81 Fay, J. A., & Co., Cincinnati, O.—Patent wood-cutting machinery. In the choice of machinery it is an object to select the best adapted to the work to be done. That a machine may be profitable, it must be so constructed as not likely to get out of order. In the display in Machinery Hall, section 8, columns 61, 62, and 63, by J. A. Fay & Co. of Cincinnati, of the several varieties of improved wood-cutting machines they manufacture, and the additions added to them during the past five years, it is claimed that the new features introduced place their machines

## Wood-working Machinery.

- in the front rank. The high reputation and character of this firm throughout this country and Europe, may be attributable—first, to the high character, and excellence of their machines; 2d, to the improvements made upon them from year to year, increasing their labor-saving features; 3d, extensive facilities and abundant capital for manufacturing. Of the different machines for planing, matching, band sawing, boring, variety wood workers, combination edging and ripping-saw tables, carving, band re-sawing, and others for sash, doors, blinds, furniture, wheels, felloes, spokes, and agricultural implements, allusion here can only be made to the more important ones. The No. 2 patent variety wood-worker is peculiar and simple in its mechanical construction, and has capacity for great range and variety of work, being constructed in a substantial manner, and possesses many labor-saving qualities. Their patent band saw with elastic wheels embraces many new and valuable labor-saving features by which the breakage of saws is prevented. Their new carving and paneling machine is designed to meet the demands for an effective machine at low cost, and is adapted for any designs of panels in fine furniture, piano, and organ manufactures. The combination edging and ripping-saw table is built wholly of metal, and is quite novel, having a rising and falling saw, hand and power feed, and with a parallel movement of the gauge or fence for rapid and accurate work. It is also provided with planed iron table, and is in all respects admirably adapted for the purposes designed. The large six-roll double cylinder patent planing and matching machine seems to be perfect in all of its appointments. It is strong and powerful. It embraces many new and valuable improvements designed for the saving of labor, economy of lumber, and increasing the quantity of production. The patent band re-sawing machine embodies several novel features which have attracted much attention from visitors, not only of this country, but of Europe. It is simple, powerful, has a large range and capacity for work. The manner of connecting the two wheel shafts with an outside connection, the automatic friction feed, revolving frictionless guides, the perfect ease of adjustment, and ready manipulations by the operator, with many others which might be added, make it a very interesting exhibit for those interested in the reduction of lumber. B 62. 510
- 83 Clark Thread Co., Newark, N. J.—Self-acting spool-winding machine, spool-turning machine. C 33, and A 34. (See also exhibit in Main Building, A 76.) 510
- 84 Holmes, E. & B., Buffalo, N.Y.—Machines for making kegs, barrels, staves, and shooks. B 50-52. 510
- 84 Bush & Smith, West New Brighton, N. Y.—Wood-working machinery. B 77. 510
- 85 S. A. Woods Machine Co., Boston, Mass.—Planing, matching, moulding, surfacing, and other wood-working machinery. B 54. 510
- 86 Patterson, C. R., Pittston, Pa.—Pressure blocks independent, showing construction and same applied to J. C. Fay's planer. B 61. 510
- 87 Buckeye Engine Co., Salem, O.—Automatic shingle machine. B 70. 510
- 88 Richards, London, & Kelley, Philadelphia, Pa.—Wood-cutting machinery. A 44-46 and Annex 1 and 2. 510
- 89 Burt, C. S. & S., Dunleith, Ill.—Machines for sawing shingles, barrel-heads, etc. B 54. 510
- 90 Blaisdell, J. H., & Co., Philadelphia, Pa.—Wood-working machinery. B 75-76. 510
- 91 Warren, John, Detroit, Mich.—Paneling machine. B 78. 510
- 92 Bentel, Margedant, & Co., Hamilton, O.—Universal wood-working machines. Planing and matching, jointing, band and scroll saws, boring and shaping machines. Bentel, Margedant, & Co. have on exhibition twelve different machines, each of them presenting new features, which are improvements, and add greatly to their value and usefulness, and are all first-class in mechanical construction. The patent universal wood-workers for planing out of wind, jointing, squaring, smoothing, beveling, cornering, chamfering, tapering, mitreing, rabbeting, tenoning, halfting, panel-raising, tonguing, grooving, hand-matching, rolling-joints, gaining, plowing, serpentine and waved moulding, fluting, beading, ripping, splitting, cross-cut sawing, straight, circular, oval, and elliptical mouldings, dovetailing, etc. The patent band-sawing machine is, in its construction and improvements, new and highly valuable. This is a patent machine, the improvements on which are entirely new features. The mechanical cause of the breakage of band-saw blades unprecedentedly and successfully removed. The buckling, friction, heating, and crystallization of the saw-blades entirely overcome. Instantaneous starting and stopping of the motion of the saw-blade. The patent scroll saw machine with uniform tension is certain at all points of the stroke. The Hamilton patent surface planer for planing out of wind, jointing, squaring, smoothing, beveling, cornering, chamfering, mitreing, and tapering, is furnished with patent triangular shear-knife cutter-heads. It planes both smoothly and accurately. Sec. B 7, columns 51-52 and 53. 510
- 93 Ross, E. W., & Co., Fulton, N. Y.—Iron framed foot jointer for barrel staves. F 64, and outside. 510
- 94 Seymour & Whittock, Newark, N. J.—Sash dovetailing, mitre, wiring, borer, mortising machines, and sewing machine motors. A 39. 510
- 95 Smith, H. B., Smithville, N. J.—Iron framed wood-working machinery, with improvements. B 47. 510
- 96 Bagge, J. T., Bridgeport, O.—Sawing and grooving machine. B 60. 510
- 97 Rogers, C. B., & Co., Norwich, Conn.—Wood-working machinery. B 75-76. 500
- 98 Armstrong, Bro., & Co., Pittsburg, Pa.—Cork cutter and tapering machinery. A 5-39. 510
- 99 Greenlee, Bro., & Co., Chicago, Ill.—Sash, blind, and door clamping machines; sash, door and blind relishing and mortising machine. A 30. 510
- 100 Skidmore, A. F. & Geo. C., Grand Rapids, Mich.—Barrel hoop machines and coilers. A 49. 510

## Wood and Metal-working Machinery.

- 101 Houston, Smith, & Co., Montgomery, Pa.—Outside bearing moulder, door tenoner, door mortiser. A 31. 510
- 102 Goodall, Braun, & Waters, Philadelphia, Pa.—Panel planer, planer and matcher, surfacer and matcher, band saw. B 77-78. 510
- 102<sup>a</sup> Gould, Roscoe J., Newark, N. J.—Dovetailing machine. A 33. 510
- 103 Mussot, A., Cincinnati, O.—General wood-working machinery. A 29. 510
- 104 Greenwich Machine Works, Greenwich, N. Y.—Weavers' wood-working machines, driven by hand, foot, or power. A 37. 510
- 105 Knapp Dovetailing Machine Co., Northampton, Mass.—Machines for cabinet dovetailing. A 35. 510
- 106 Combined Power Co., New York, N. Y.—Geared machinery for all powers. A 34. 510
- 107 Colloday, Jos. O., & Bro., Philadelphia, Pa.—Jointing machine, band saw machine, etc. B 56. 510
- 108 Gleason, John, Philadelphia, Pa.—Spoke and handle turning lathe, etc. B 64. 510
- 109 Babbitt, F. S., Taunton, Mass.—Combination foot lathe. B 61. 510
- 110 Howard Manufacturing Co., Belfast, Me.—Mitting machines, easily adjustable in all the different parts, cuts all angles, used by cabinet makers, carpenters, picture frame makers, car builders, etc. A 28. 510
- 111 Earle, Benj. A., Philadelphia, Pa.—Wool-oiling machine. D 48. 510
- 112 Whitney, Baxter D., Winchendon, Mass.—Wood-working machines. B 79-80. 510
- 113 Benson, A. M., Cleveland, O.—Stave machinery dresser and jointer. A 29. 510
- 114 Goulding, Johnston, & Co., Louisville, Ky.—Hoop and splint machine. B 66. 510
- 115 Hart, Roswell, Rochester, N. Y.—Machines for making half-round hoops for barrels, etc. B 46. 510
- 116 Pope Manufacturing Co., Boston, Mass.—Lathe scroll saw. Acme lathe \$9.00; scroll saw, \$5.00 and \$7.00; darning machine, \$10.00. C 64. 510
- 117 Buck, Martin, Lebanon, N. H.—Single, double, and triple tenoning machines, blind mortising and boring machine, slot planer, wedge and pin machine, band saws, etc. B 64. 510
- 118 Bustin, Robert, St. Johns, N. B.—Fire escape. Bustin's portable fire escape is one of the many new inventions that deserve special notice for its simplicity, cheapness, durability, and almost certain security to life. It is simple in its construction, easily adjusted, and can be carried in a small valise, thus insuring the traveler that, no matter how high in a hotel, he can in a moment rescue his own life, and if he has others in the room in the same perilous situation, save them at the same time. It can be used in many ways, as it is so ingeniously made that it is always ready for use. There is no machinery connected with it. It cannot get out of order. In case the lower part of the building is so enveloped in flames as to render a direct descent impossible, the parties can make a descent across the street. It is now on exhibition at the north end of Machinery Hall, where practical illustrations of its workings can be seen. The fire escapes, all complete, cost from \$10.00 to \$15.00. In every case you can save your apparatus. 564
- 119 Lane & Bodley, Cincinnati, O.—Stationary portable circular saw mill. (A 50, *Saw mill*.) 511
- 120 Eureka Bark Mill Co., Lancaster, Pa.—Bark mills. A 28. 511
- 121 Harbert & Raymond, Philadelphia, Pa.—Portable saw mill. (*Saw mill*.) 511
- 122 Ross, E. W., & Co., Fulton, N. Y.—Automatic circular saw mill. F 64 and *outside*. 511
- 122<sup>a</sup> Scholfield, Socrates, Providence, R. I.—Logging saw. (*Saw mill*, B 12.) 511
- 122<sup>b</sup> Meiners, C., & Sons, Philadelphia, Pa.—Band, saw mill and head blocks. B 13. 511
- 122<sup>c</sup> Harvey, Easton, & Co., Lock Haven, Pa.—Gang lathe mill. B 15. 511
- 122<sup>d</sup> Stearns Manufacturing Co., Erie, Pa.—Circular saw mill, double edging machine, log jack, log turner, steam engine. (*Saw mill*, A 3, B 3.) 511
- 122<sup>e</sup> Allis, Edward S., & Co., Milwaukee, Wis.—Saw mill machinery. (*Saw mill*, A 10-11.) 511
- 123 Flint, C. M., Fitchburg, Mass.—Saw mill. B 13. (*Saw mill*.) 511
- 124 Noyes, Frank G., Clinton, Iowa.—Gang edger with four circular saws. B 12. (*Saw mill*.) 511
- 125 Duncannon Iron Co., Philadelphia, Pa.—Nail-cutting machines. B 25. 512
- 126 Pennsylvania Tack Works, Norristown, Pa.—Tack machines and their products. B 26. 512
- 127 Garrison, A., & Co., Pittsburg, Pa.—Chilled rolls for rolling metals. Manufacturers of chilled and sand rolls, ore and clay pulverizers, rotary squeezers, Haskin's patent double spiral pinions, and rolling mill castings of every description. B 27. 512
- 128 Middleton, John W., Philadelphia, Pa.—Cast and wrought iron, and steel ready for the planer. C 77. 512
- 128<sup>a</sup> Lattimore, D. I., Philadelphia, Pa.—Suction and blast fan. B 64. 512
- 128<sup>b</sup> Hyslop, John, Jr., Abington, Mass.—Machine for making tacks and shoe nails: Hill, Clarke, & Co., selling agents, Boston, Mass. B 35. 512
- 128<sup>c</sup> Morris, Wheeler, & Co., Philadelphia, Pa.—Nail machine in operation, boiler and ship plates, nails, puddled bars, ores, etc. B 24. 513
- 129 Flagg, Stanley G., & Co., Philadelphia, Pa.—Malleable gray iron and steel castings. A 41. 513
- 130 Midvale Steel Works, Philadelphia, Pa.—Bar steel, steel forgings and castings. C 23. 513  
(See also classification 573.)

## Metal-working Machinery.

- 131 Dick, C. J. A., Philadelphia, Pa., Phosphor Bronze Smelting Works, 2038 Washington avenue.—Phosphor bronze ingots, axle bearings, castings, bells, wire, sheets, tubes, etc. A 6, 42. 513
- 132 Eames, Charles J., New York, N. Y.—Petroleum iron boiler plates, forge blooms, billets, jack plates, horseshoes, etc. (*Annex 1.*) 513
- 132a Roberts, E. A. L., Titusville, Pa.—Compound metal. C 78. 513
- 133 Reed, S. G., Boston, Mass.—Apparatus for heating locomotive and carriage tires with gas; portable gas attachment for lighting streets. E 69. 513
- 134 Malleable Iron Fittings Co., Brawford, Conn.—Malleable iron steam and gas fittings and castings. A 4. 513
- 135 Lawrence, Frank, Philadelphia, Pa.—Cupola and urier. (*In building of C Noble & Co.*) 513
- 135a Phosphor Bronze Smelting Works, C. J. A. Dick, Philadelphia, Pa.—See No. 131. 513
- 135b Harris, Samuel, Springfield, Mass.—Sifting machines. (*Adjoining Annex 2.*) 513
- 136 Keystone Portable Forge Co., 120 Exchange Place, Philadelphia, Pa.—Portable forges and pressure and exhaust blowers; forges, portable or stationary, for hand or power, forty-seven styles and sizes, for every class of work from lightest to heaviest, and patented and sold in all leading countries. English, French, and Belgian patents for sale. Also blowers for every purpose requiring either pressure or exhaust; all shown in operation. (*Annex No. 1, Machinery Hall.*) 514
- 137 Carnell, F. L. & D. R., 1844 Germantown avenue, Philadelphia, Pa.—Steam hammers. See illustrated catalogue. (*Annex 1 and 3.*) 514
- 137a Kacy, Robert F., Philadelphia, Pa.—Hand fan-blower. (*Adjoining Annex 2.*) 514
- 138 Forsaith, S. C., & Co., Manchester, N. H.—Abbe bolt forging machine, spring hammers. E 39 and *annex.* 514
- 139 Ferris & Miles, Philadelphia, Pa.—Machine tools and steam hammers. B 31 and 32. 514
- 140 Merrill, Chas., & Sons, New York, N. Y.—Drop hammer, parallel vises, differential blocks. C 4 and *Annex 2.* 514
- 141 Hammond, H., & Co., Hartford, Conn.—Cast steel hammer, anvil, and drop forgings. A 41. 514
- 142 Metz, George W., & Sons, Philadelphia, Pa.—Bellows. (*Annex 1.*) 514
- 143 Bayliss, John, New York, N. Y.—Hot blast water tuyere and forge, blacksmiths' bellows, portable forge and bellows. (*Annex 1.*) 514
- 144 Bradley Manufacturing Co., Syracuse, N. Y.—Cushioned helve hammers. B 29. 514
- 145 Tubular Barrow & Truck Manufacturing Co., New York, N. Y.—Self-acting steam hammer. (*Annex 1.*) 514
- 146 Empire Portable Forge Co., Troy, N. Y.—Portable fan-blowing forges. (*Annex 1.*) 514
- 147 Bullock, T. H., & Co., Cleveland, O.—Blacksmiths', moulders', hand, and coopers' bellows. (*Annex 1.*) 514
- 148 Hull & Belden Co., Danbury, Conn.—Power forging hammer, samples of drop forgings. C 72. 514
- 148a Mason, John L., Camden, N. J.—Tire shrinker, blacksmiths' tuyere and pinch bar. (*Annex 1.*) 514
- 148b Schierloh, H., Jersey City, N. J.—Heat welding compound, with samples of iron and steel welded. (*Annex 1.*) 514
- 148c Stiles & Barker Press Co., Middletown, Conn.—B 34, and *Annex 1.* 514  
a Drop hammers. 514  
b Sheet metal presses. 515
- 148d Pusey, Jones, & Co., Wilmington, Del.—D 33. 514  
a Riveting machine. 514  
b Sheet iron cleaner. 515
- 149 Howard, George C., 13½ S. Eighteenth street, Philadelphia, Pa.—Grindstone box, hacker, for truing and sharpening the stone, drill-press, boring and sapping machine. B 31. 515
- 150 Cooper, John H., Philadelphia, Pa.—Model of mechanical movement. C 31. 515
- 151 Mitchell, J. E., Philadelphia, Pa.—Founded, 1810.—Column of 38 varieties of grindstones; two thousand tons in stock; seven sizes of machinists' grindstones in iron boxes. Send for descriptive pamphlet. B 28 and 29. 515
- 152 Sternbergh, J. H., Reading, Pa.—Surface-grinding machine, bolts, nuts, washers, rivets, wood screws, etc. B 37. 515
- 153 American Twist Drill Co., Woonsocket, R. I.—Automatic knife-grinders, emery wheels, and machinery. C 32. 515
- 154 Cooper, Jones, & Cadbury, Philadelphia, Pa.—Lathes. B 19. 515
- 155 Wattis, Edward, jr., Philadelphia, Pa.—Patent pocket flasks, with metallic collars secured without cement. B 34. 515
- 155a Laurence, Benjamin, Lowell, Mass.—Index and plain milling machine. B 29. 515
- 155b Sawyer, J. A., & Son, Worcester, Mass.—Combined hand and power iron planer, Hill, Clarke, & Co., selling agents, Boston, Mass. C 40. 515
- 155c Gallagher, Beñard, Lynn, Mass.—Emery grinder; drills. C 39-40. 515
- 155d Weed & Co., Boston, Mass.—File cutting machine. G 30. 515
- 156 Stevens, W. X., East Brookfield, Mass.—Centre cutting shears for iron, to cut old steamboat shafts, ralls, chain links, bolts, angle and merchant iron, cold; power unlimited. B 34. 515
- 157 Ferris & Miles, Philadelphia, Pa.—Planing, shaping, slotting, drilling, cut-off, turning, boring, punching, and shearing machines. B 31-32 and *Annex 1.* 515
- 158 Brown & Sharpe Manufacturing Co., Providence, R. I.—Machinery and tools. Manufacturers of universal and plain milling machines, grinding, screw, and tapping machines, screw finishing and

## Metal-working Machinery.

- polishing machines, reels, assorters, scales, and testers for roving and yarn, for cotton and woolen manufacturers' use, patent cutters for gear wheels, and for taps, beamers, twist drills, irregularly formed sewing machine and gun parts, milling and screw slotting cutters. B 38. 515
- 159 Lobdell Car Wheel Co., Wilmington, Del.—Solid die rivet machine. E 65. 515
- 159<sup>a</sup> Richards, I. P., Providence, R. I.—Punches for metal. A 42. 515
- 159<sup>b</sup> Handey Machine Co., Walcottville, Conn.—Planer and shaper. D 35. 515
- 159<sup>c</sup> Howard, William H., Philadelphia, Pa.—Loom frame with automatic let-offs. B 31. 515
- 159<sup>d</sup> Cosmopolitan Emery Wheel Co., Philadelphia, Pa.—Emery wheels for grinding saws, tools, etc. (*Annex 1.*) 515
- 160 American Saw Co., Trenton, N. J.—B 33. 515
- <sup>a</sup> Movable tooth circular, perforated, and solid saws. 510
- <sup>b</sup> Eccentric-g geared power punching and shearing machines. 515
- 161 Cornell University Machine Shop, Ithaca, N. Y.—Foot lathe, magneto-electrical machine, measuring machine, tools, and gauges. B 68. 515
- 162 Chase Manufacturing Co., New York, N. Y.—Portable pipe and bolt cutting and threading machine. B 28. 515
- 163 Smith, Oberlin, & Bro., Bridgeton, N. J.—Upright or inclined foot and power presses, for cutting or drawing tinware, and can makers' tools, pipe tools, special drills, etc. C 27. 515
- 164 Lovegrove & Co., Philadelphia, Pa.—Pipe threading and cutting machine. B 75 and *Boiler House 4.* 515
- 165 Thorne, De Haven, & Co., Philadelphia, Pa.—Drilling machines. B 30. 515
- 166 George & Du Lapey, New York, N. Y.—Screw machinery. C 55 and B 29. 515
- 166<sup>a</sup> Clough & Williamson, Newark, N. J.—Wire corkscrews and handles; machine for manufacturing same. B 38. 515
- 166<sup>b</sup> Edwards, E. B., Columbia, Pa.—Axle rolls. B 40. 515
- 166<sup>c</sup> Cushing, N. B., Jersey City, N. J.—Shears, and punching machines. B 26. 515
- 167 Merriman, A. H., West Meriden, Conn.—Power punching press. B 29. 515
- 168 Jones, Lamson, & Co., Windsor, Vt.—Engine lathes, screw machines, gang drills, etc. B 36. 515
- 170 Sellers, William, & Co., Philadelphia, Pa.—C 18 to 25 and *Annex 1.* 514
- <sup>a</sup> Steam hammers. 514
- <sup>b</sup> Machine tools, punching and shearing machines. 515
- 171 Washburn Machine Shop, Worcester Free Institute, Department Mechanical Engineering, Worcester, Mass.—Lathes with hardened steel bearings; grinding machines and drawing stands. C 38. 515
- 172 Spiral Elliptic Spring Works, Cincinnati, O.—Machinery for making upholstery springs. E 70. 515
- 173 Worcester, E. J., & Co., Worcester, Mass.—Vertical drills for metals, blacksmith's lathe. C 32. 515
- 174 Schon, Mathias, Englishtown, N. J.—Tire upsetting machine. (*Annex.*) 515
- 175 Nichols, Pickering, & Co., Philadelphia, Pa.—Portable rail punches. D 67. 515
- 176 Prentice & Co., Worcester, Mass.—Lathes, slide rests, drills. C 31. 515
- 177 Van Hagen, C., & Co., Philadelphia, Pa.—Rotary shapers, iron planers, drill sharpeners, drills, and boring tools. C 30. 515
- 177<sup>a</sup> Vitrified Wheel and Emery Co., Ashland, Mass.—Emery and emery wheels. (*Annex.*) 93
- 177<sup>b</sup> Long, Alstater, & Co., Hamilton, O.—Punching and shearing machines. B 36. 515
- 177<sup>c</sup> Broadbooks & Co., Batavia, N. Y.—Folding chairs. C 43. 515
- 177<sup>d</sup> Howard Iron Works, Buffalo, N. Y.—Propeller wheel. C 29-30. 515
- 177<sup>e</sup> Dudgeon, Richard, New York, N. Y.—Punches. C 27. 515
- 177<sup>f</sup> Temple, Edward B., Philadelphia, Pa.—Planing machine for metals, etc. B 28. 515
- 177<sup>g</sup> Old Colony Rivet Works, New York, N. Y.—Iron planers, shears, cutters, punches, drilling machines, rivets, etc. B 28. 515
- 177<sup>h</sup> Clark, John A., Newark, N. J.—Drip pan for kerosene and other liquids. C 30. 515
- 178 Miller's Falls Co., Miller's Falls, Mass.—A 40. 515
- <sup>a</sup> Scroll saw. 510
- <sup>b</sup> Iron cutter, drilling machines. 515
- <sup>c</sup> Vises. 519
- 179 Putnam Machine Co., Fitchburg, Mass.—Machinists' tools, steam engines, Woodworth planers, water wheels, shafing, mill work, etc. C 28. 515
- 180 Kreider, Campbell, & Co., Philadelphia, Pa.—E 50. 515
- <sup>a</sup> Engine lathe. 515
- <sup>b</sup> Glassware grinding machine. 516
- 181 American Watch Tool Co., Waltham, Mass.—Lathes for watchmakers' use, and bench lathes for machinists. F 38-40. 515
- 182 Coe, C. W., Fenton, Mich.—Hand power drill press and screw cutter. B 29. 515
- 182<sup>a</sup> Young, William, Easton, Pa.—Young's patent water and gas main tapping machine. With this apparatus the main pipe is drilled and tapped, the service pipe screwed in, and connection made in one operation, without shutting off the water or changing tools. (*Pump annex 7-5.*) 514
- 183 E. Horton & Son Co., Windsor Locks, Conn.—Lathe and car-wheel chucks. B 30. 515

## Metal and Stone-working Machinery.

- 184 Oneida Steam-Engine & Foundry Co., Oneida, N. Y.**—Westcott's combination lathe chucks, works universally and independently, holds objects twenty-five per cent. larger than diameter of chuck, jaws all reversible. Little Giant drill chucks holds from 0 to one inch. B 30. 515
- 185 Whiton, David E., West Stafford, Conn.**—Gear-cutting machines, machines for centering iron, lathe chucks, drill chucks, etc. C 31. 515
- 186 Wicaco Screw & Machine Works, Philadelphia, Pa.**—Special machine screws, studs, rolls, punches, dies, drills, taps, reamers, mills, etc. B 37. 515
- 187 Bliss & Williams, Brooklyn, N. Y.**—Presses for making tinware and articles of sheet metals. C 30. 515
- 188 Chase, Pliny E., Newark, N. J.**—Back-gear, screw-cutting, conical-bearing foot lathes, slide rests, and fittings. B 36. 515
- 189 Northampton Emery Wheel Co., Leeds, Mass.**—Solid emery wheels, and machinery for showing uses. B 37, and *Annex 1*. 515
- 190 Prouty, A. B., Worcester, Mass.**—Chucks and jaws for iron planers. D 59. 515
- 191 Racine Hardware Manufacturing Co., Racine, Wis.**—Jewelers' and dentists' polishing and turning lathes, power wheels, engraving blocks, and other tools. C 41. 515
- 192 Newbold, Richard S., & Son, Norristown, Pa.**—Rotary shear for sheet and plate iron. B 33. 515
- 193 Watson, James, Philadelphia, Pa.**—Non-changeable gap lathe. C 31. 515
- 194 Mitchell, J. H., Philadelphia, Pa.**—Grindstone boxes. B 80. 515
- 195 Wharton, Wm., Jr., Philadelphia, Pa.**—Rail-bending machine. D 72. 515
- 196 Pratt & Whitney, Hartford, Conn.**—Mechanists' tools: gun and sewing machine machinery; drop forging, threading bolts, nuts, and pipe. C 23-26, and *Annex 1*. 515
- 197 Kennedy, De Lancy, New York, N. Y.**—Shearing, peaching, gripping, and pressing tools and machinery; spiral punch and die. B 37. 515
- 198 Cummings, Geo. L., New York, N. Y.**—Grindstone frames. B 34. 515
- 199 Flather & Co., Nashua, N. H.**—Engine lathes, 17 and 14 inch swing, with hollow steel spindles, steel screws and shafts, wrought iron racks and case hardened nuts and handles. Self-reversing tapping machine, used in principal gun and sewing machine factories. Prices low. Hill, Clarke & Co., selling agents, 131 Milk street, Boston, Mass. C 38-40. 515
- 200 Doriot, Constant, 337 S. Seventh street, Philadelphia, Pa.**—Footlathe, with slide rest; fine tool maker, and fine work of precision of all kinds. C 34. 515
- 201 Celluloid Emery Wheel Co., Newark, N. J.**—Grinding and polishing wheels, made of emery or corundum, cemented into a mass with the new and remarkable material, celluloid. These wheels are all that can be required, as to strength and cutting qualities; they are perfectly even and homogeneous, and will not glaze under any circumstances. They may be used either wet or dry, as they never soften in water, oil, or any other lubricant. (*Annex 1*.) 515
- 202 Teal, C. A. & W. L., Philadelphia, Pa.**—Boiler rolls, punching and shearing machines, hair-picking machine. C 25. 515
- 203 Scofield, Charles, Vineland, N. J.**—Machine for straightening shafting in position. C 34. 515
- 204 Cox & Sons, Bridgeton, N. J.**—Steam and gas-fitters' tools, supplies, etc. C 32. 515
- 205 Hamlin, G. A., Philadelphia, Pa.**—Machinery for refitting valves. C 35. 515
- 206 Merritt, Daniel S., Bay City, Mich.**—Machine for cutting heavy iron bars and plates; punch for all kinds of metal. B 36. 515
- 207 Fitchburg Machine Co., Fitchburg, Mass.**—Engine lathes, drills, planer, and shaping machine. C 38. 515
- 208 Ames Manufacturing Co., Chicopee, Mass.**—Engine lathes, planer, drills, edging machine, die-sinking machine. C 38 to 40. 515
- 208<sup>a</sup> Putnam & Estey, Fitchburg, Mass.**—Emery wheels. (*Annex 1, 32*.) 515
- 208<sup>b</sup> Howard Iron Works, Buffalo, N. Y.**—Automatic revolving die-bolt cutter and nut-tapping machines. C 29. 515
- 208<sup>c</sup> Reynolds, D. M., Port Deposit, Md.**—Machine for cleaning and polishing sheet iron. C 36. 515
- 208<sup>d</sup> Cleveland Patent Manufacturing Co., Cleveland, O.**—Bolt and pipe cutters; cutter heads. B 29. 515
- 209 Gray, J. Hammond, Philadelphia, Pa.**—Screw machinery, for turning and threading screws, etc. B 27. 515
- 210 Hilles & Jones, Wilmington, Del.**—Radial drills and slotting machine. B 37. 515
- 211 Hardy Machine Co., Biddeford, Me.**—Hardy's improved traverse emery wheel card-grinders, for truing and grinding perfectly the teeth of cotton and wool cards. We warrant the "Hardy" card grinder, cloth-shear grinder, and planer knife grinder. B 35. 515
- 212 Stacy Stone Dressing Machine Co., New York, N. Y.**—Stone-dressing machine. (*Annex 3*.) 516
- 213 Rogers, William A., Cambridge, Mass.**—Automatic machine for grinding parallel surfaces on glass, etc. C 42. 516
- 214 Branch, Crookes, & Co., St. Louis, Mo.**—Diamond circular saws and machinery for sawing stone. (*Saw mill*.) 516
- 215 Steam Stone Cutter Co., Rutland, Vt.**—Stone channeling or quarrying machines; block of machine-cut marble. (*Annex 2*.) 516
- 216 Emerson Stone Saw Co., Pittsburg, Pa.**—Diamond circular stone saw and machine. This machine, doing regular work, cuts in ordinary sandstone one hundred and fifty square feet per hour (counting both sides of the cut), and other stone in proportion, according to the

## Stone, Brick, Glass-working Machinery.

- relative hardness, leaving the stone perfectly in line, beautifully finished, ready to be placed into buildings, etc. This is more than can be accomplished by one hundred men in the same space of time, and at an expense not exceeding the cost of sharpening and wear of tools necessary to do the same amount of work. The highest honor (a gold medal) was awarded to this saw at the Cincinnati Exposition of 1874 and at the Pittsburg Industrial Exposition of 1875. (*Annex 2.*) 516
- 217 Batley, John, & Co., Philadelphia, Pa.—Shaping machine, for moulding, paneling, or carving on marble, etc. (*Annex 2.*) 516
- 218 Davis & Richmond, Detroit, Mich.—Hand machine for cutting and punching slate. (*Annex 2.*) 516
- 219 Ryan, James M., Cincinnati, O.—Silver-plated lathe, show cases, and process of cutting glass. D 38. 516
- 220 Ross, Thos., Rutland, Vt.—Stone-sawing machine. (*Annex 2.*) 516
- 221 Young, Hugh, New York, N. Y.—Reciprocating diamond stone-sawing machines. (*Saw mill.*) 516
- 222 Union Stone Co., Boston, Mass.—Solid emery wheels and machinery for grinding and polishing. Emery wheels, from one inch to six feet in diameter, and grinders for mounting them. Special machines for jointing plows, beveling boiler plates, gumming saws, etc. Patent automatic knife grinder, a decided success, for grinding planing machines, bookbinders' curriers', and long knives and shears of all kinds. Grinders and polishers' supplies. B 37, and *Annex 1.* 515
- 223 Carnell, F. L. & D. R., 1844 Germantown avenue, Philadelphia, Pa.—Fire and red brick presses; working model of "Peerless" brick machine. The above firm manufacture brick machinery of every description, of which they have a fine illustrated catalogue, which will be mailed to any person sending them their address. (*Annex 1 and 3.*) 517
- 223a Aiken, Henry, Philadelphia, Pa.—Hydrostatic machine; stone-separating and clay-tempering machine. (*Annex 3.*) 517
- 223b Farr, George, New York, N. Y.—Working model of brick machine. (*Annex 3.*) 517
- 223c Maas, Albert W. M., Meridian, Miss.—Model and drawing of perpetual burning brick-kiln. (*Annex 3.*) 517
- 223d Whiteford, John, Detroit, Mich.—Brick moulding, off-bearing, and yard-leveling machine. (*Outside of building.*) 517
- 223e Miller, Samuel P., & Son, Philadelphia, Pa.—Hand brick pressing machines. (*Annex 3.*) 517
- 223f Wyatt, Charles B., Somerville, Mass.—Grate, bevel knife, and spring pressure for brickmakers' use. (*Annex 3.*) 517
- 224 Newkumet, Adam, Philadelphia, Pa.—Crucible and pottery ware machines, drying apparatus for glass-house pots, retorts, etc. (*Annex 3.*) 517
- 225 Miller, Samuel P., & Son, Philadelphia, Pa.—Hand brick press, model of clay-tempering machine, brickmakers' tools. (*Annex 3.*) 517
- 226 Carnell, Geo., Philadelphia, Pa.—Brick press and pug mill. (*Annex 3.*) 517
- 227 Morand, Augustus, Philadelphia, Pa.—Brick-making machine. (*Annex 3.*) 517
- 228 Garretson, I. H., Keokuk, Iowa.—Brick-moulding machine, ring fence. (*Annex 3.*) 517
- 229 Excelsior Brick & Stone Co., Philadelphia, Pa.—Model of brick machine, samples of brick and stone. (*Annex 3.*) 517
- 230 McLean & Benner Brick Machine Co., Philadelphia, Pa.—Impact brick machine, making brick with a blow. (*Annex 3 and C 50.*) 517
- 231 Chambers, Bro., & Co., Philadelphia, Pa.—Archimedian brick machine. D 23. 517
- 232 Hotchkiss, James, Springfield, O.—Brick machine. (*Outside of building.*) 517
- 233 Gregg, Isaac, jr., & Co., Philadelphia, Pa.—Steam brick machine, octafaced front brick. (*Annex 3.*) 517
- 234 Hazlehurst, Samuel, St. Louis, Mo.—Hand brick-moulds. (*Annex 3.*) 517
- 235 Hoyt, Andrew J., Philadelphia, Pa.—Brick machine; steam hammer. (*Annex 3.*) 517
- 236 Gregg, Wm. L., Philadelphia, Pa.—Triple pressure brick machine for making and also re-pressing all kinds of brick; ceramic gas-kiln, for drying and burning red brick, fire brick, terra-cotta, chimneys, lime, pottery, and drain pipe. (*Annex 3.*) 517
- 237 Great American Brick Machine Co., Croton, N. Y.—Brick machine and trucks. (*Annex 3.*) 517
- 238 Gregg Impact Brick Machine Co., Philadelphia, Pa.—Model of brick machine. (*Annex 3.*) 517
- 238a Stacy, George, New York, N. Y.—Fastening for stonecutters' use, etc. (*Annex 3.*) 517
- 239 Williams, S., & Son, Philadelphia, Pa.—Brickmakers' implements. (*Annex 3.*) 517
- 240 Stockwell, J. W., Portland, Me.—Cement pipe machinery, concrete mixing, sewer pipe tamper, moulds for drain pipe, samples of work. A 55. 517
- 241 Martin, Henry, Lancaster, Pa.—Self-acting brick machine. (*Annex 3.*) 517
- 242 Laffer, J. A., Albion, N. Y.—Brick-making machine in operation, brick mould, bricks, and model of brick machine. (*Annex 3.*) 517
- 243 Hamilton, S. M., Baltimore, Md.—Perpetual brick kiln. (*Annex 3.*) 517
- 244 Mathieu, Charles, Colosse, N. Y.—Glass steam-engine, glass-blowing, knitting, spinning, and forming fancy glass ornaments. E 74. 517
- 245 Burgess, Warren S., Norristown, Pa.—Blowpipe, animal-clipping machine. E 75. 518
- 246 Holzer, William, Philadelphia, Pa.—Process of manufacture of druggists', chemists', perfumers', philosophical, and fancy glassware. B 32. 518

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.



## Glass and-Metal-Working Machinery and Tools.

- 247** Brooke, Homer, New York, N. Y.—Glass manufacturers' moulds and presses, for making bottles, jars, lamps, lantern globes, and for all kinds of pressed and blown glass; also private moulds for patent medicine bottles. E 75. 518
- 248** Chase, B. F., E. Stroudsburg, Pa.—Glass-blowing machines. E 74. 518
- 249** Steele Bros., 209 South Eleventh street, below Walnut, Philadelphia, Pa.—Glass engraver at work. Decorated china and engraved glass. Dinner, dessert, and tea sets decorated, to order, in any color or design. Monograms, crests, initials engraved on glass. E 75. 518
- 249a** Bevington & Winters, Philadelphia, Pa.—Glass furnace; china furnace; printing press and mineral cases, belonging to the art of porcelain printing. (*Annex 7.*) 519
- 250** McCaffrey & Bro., Philadelphia, Pa.—Hand-cut files and rasps. A 41. 519
- 251** Krumbhaar, Alexander, Philadelphia, Pa.—Hand-cut files and rasps. A 43. 519
- 252** Barnett, G. & H., Philadelphia, Pa.—Files and rasps. A 39-40. 519
- 253** Flagg, Stanley G., & Co., Philadelphia, Pa.—Carriage hardware. A 41. 519
- 253a** Knight, Edward H., Philadelphia, Pa.—Monkey wrench. A 41. 519
- 253b** Coe, A. G., & Co., Worcester, Mass.—Screw wrenches. B 41. 519
- 254** Hoopes & Townsend, Philadelphia, Pa.—Bolts, cold-punched nuts, washers, chain links, wood screws, rivets. C 32. 519
- 255** Stephens Patent Vise Co., New York, N. Y.—Parallel vise, with swivel, taper, table, woodworkers, and pipe attachment. B 6. 519
- 256** Billings & Spencer Co., Hartford, Conn.—Drop forgings for guns, pistols, sewing machines, and machinery generally; screw plates and dies, Packer ratchet drills, Barwick pipe wrenches, clamp, die, and common lathe dogs, marlinspikes, and calker's tools. B 40. 519
- 257** Brainard Milling Machine Co., Boston, Mass.—Standard, universal, index, and plain milling machines, for working metals in all shapes, cutting key seats, spur and bevel gears, twist drills, fluting taps and reamers, and making tools of all kinds. Are universally used in American establishments. C 38-40.
- a* Grinding machines for sharpening the milling cutters, without drawing the temper. 515
- b* Set screw machine, new design. 515
- c* Steel bar vises, combining strength with lightness and convenience. 519
- 258** Bedell, Otis T., New York, N. Y.—Screw wrench. B 40. 519
- 259** Monk, Chas., Brooklyn, N. Y.—Iron moulders' steel-finishing tools. B 40. 519
- 260** Silver & Deming Manufacturing Co., Salem, O.—Blacksmiths' post and table drills. F 54. 519
- 261** Morse Twist Drill and Machine Co., New Bedford, Mass.—Patent increase twist drills, beach chucks, machine relieved taps, screw plates, tap wrenches, adjustable dies, solid and split dies, pipe, solid, and shell reamers, adjustable and centre drill chucks, milling cutters, drill grinding machines, special tools. All tools to standard gauges. B 40. 519
- 262** Plumb, Burdick, & Barnard, Buffalo, N. Y.—Bolt-forging machines, with forge. (*Annex.*) 519
- 263** Clark Bros. & Co., Milldale, Conn.—Bolts, rivets, nuts, washers, etc. B 41. 519
- 264** Parker, Chas., Meriden, Conn.—Vises. B 41. 519
- 265** Fisher & Norris, Trenton, N. J.—Parallel double screw vises, hardened cast steel faced steam and drop hammer dies, steel faced ore stamp shoes, and all articles requiring hardened cast steel welded to cast iron. Warranted. B 41, and *Annex.* 519
- 266** Western File Co. (limited), Beaver Falls, Pa.—Machine-cut files. A 41. 519
- 267** Haase, John A., Philadelphia, Pa.—Floor and door clamps, ratchet drills. B 41. 519
- 268** Simonds Manufacturing Co., Fitchburg, Mass.—Knives and sickles for mowers and reapers, planing machine knives, circular saws. B 41. 519
- 268a** Flanagan, W. J., & Co., Philadelphia, Pa.—Wrenches. B 41. 519
- 268b** Bailey Wringing Machine Co., New York, N. Y.—Adjustable parallel vises. A 42. 519
- 268c** Barnett, Oscar, Newark, N. J.—Malleable and gray iron castings, brass foundry's flasks, etc. A 39. 519
- 268d** Russell, Wm. C., New York, N. Y.—Adjustable wrench. D 73. 519
- 268e** Cleveland Screw & Tape Co., Elyria, O.—Milled set and cap screws, taps and nuts. B 43. 519
- 269** Rutschmann Bros., Philadelphia, Pa.—Self-feeding hand drill. B 29. 519
- 270** Mudge Hook, Tooth, File, & Rasp Co., Brooklyn, N. Y.—Machine files and rasps. A 40. 519
- 271** Russell, Burdall, & Ward, Port Chester, N. Y.—Bolts for manufacturers' use. A 40. 519
- 272** Clark Bros., Philadelphia, Pa.—Eccentric or cam rivet pipe tong. B 40. 519
- 273** Pool, A. Alex., & Co., Newark, N. J.—Steel arbors for machinists and jewelers. B 40. 519
- 274** Wood, Geo. W., Philadelphia, Pa.—Self-adjusting flooring clamp and lifting jack. A 41. 519
- 275** Orum, Morris L., Philadelphia, Pa.—Flexible mandrels for bending metal pipe. B 40. 519
- 276** Eaton, Cole, & Burnham Co., 58 John street, New York, N. Y.—Brass and iron goods for steam, water, and gas; cast iron radiators, tools, etc. B 41. 519
- 277** Shaw, Thomas, Philadelphia, Pa.—Lathe tools. D 69. 519
- 278** Nicholson File Co., Providence, R. I.—Files, finished, ground, and forged; file steel. C 34. 519

## Metal-Working Tools, Silk and Cotton-Working Machinery.

- 279** American File Co., Pawtucket, R. I.—Files, file-testing machine. C 34. 519
- 280** Hey, Henry T., Philadelphia, Pa.—Measuring gauge. A 41. 519
- 281** Spiral Tubing Co., Boston, Mass.—Machine for making spiral seam pipe. B 34. 519
- 282** Hewitt & Follensbee, Washington, D. C.—Machines for filing and setting saws. A 29. 515
- 283** Wilkinson, A. J., & Co., Boston, Mass.—Foot-power lathe, bench lathes, small-power planer, hand-planer. C 38-40. 519
- 284** Wyman, J. Dana, Boston, Mass.—Self-heating soldering iron. B 49. 519
- 285** Backus, Q. S., Winchendon, Mass.—Bit braces, ratchet braces, tack hammers, etc. A 40. 519
- 286** Johnson, Wm., Lambertville, N. J.—Universal lathe chuck. C 77. 519

## Machines and Implements of Spinning, Weaving, Felting, and Paper Making.

- 287** Cutter, John D., & Co., New York, N. Y.—Jacquard silk loom in operation; mechanism for measuring silk while spooling it. D 31. 520
- 288** Knowles & Bro., Worcester, Mass.—D 51. 520
- a* Looms for silk dress goods, ribbons, webblings, etc. 520
- b* Looms for plain and fancy woolen goods. 522
- 290** Wrigley, John, Paterson, N. J.—Jacquard loom, changeable for power or hand. D 31. 520
- 291** Danforth Locomotive & Machine Co., Paterson, N. J.—Silk machinery. D 29. 520
- 292** Nonotuck Silk Co., Florence, Mass.—Machinery for throwing and finishing orgazine, sewing silk, twist, and embroidery; machine for printing spools. D 41. 520
- 293** Holland Manufacturing Co., Williamantic, Conn.—Machines for winding, measuring, and testing the strength of sewing-silk and other threads. D 34. 520
- 294** Lawson, Peter, Lowell, Mass.—Drawing or roving can. B 58. 521
- 294a** Sullivan Machine Co., Claremont, N. H.—Papier-maché roving cans. D 46. 521
- 294b** Davis, Caleb S., Philadelphia, Pa.—Cotton goods finisher. D 46. 521
- 295** Avery, John G., Worcester, Mass.—Thread, twine, and cord machinery. D 54. 521
- 296** Butterworth, H. W., & Sons, Philadelphia, Pa.—Drying machines for muslins, prints, tickings, etc.; dyeing and sizing machines, calenders and finishing machinery of all kinds. Tinned sheet iron cotton cans, etc. D 44 to 48. 521
- 299** Willimantic Linen Co., Hartford, Conn.—Spool cotton thread-winding and ticketing machines; ring spinning frame. C 52, 53. 521
- 300** Clark Thread Co., Newark, N. J.—Self-acting spool-winding machine; show case. C 33 and A 34. 521

- 301** Dutcher Temple Co., Hopedale, Mass.—Dutcher's patent self-acting power loom temples. May be seen in operation upon the looms of Geo. Crompton, Esq., Messrs. J. & W. Lyall, and Messrs. L. J. Knowles & Bro., at the Centennial. C 37. 521
- 302** Kitson Machine Co., Lowell, Mass.—*a* Cotton openers and lappers. 521  
*b* Shoddy pickers and rag dusters. 521  
*c* Leather needle-pointed card clothing, for carding hemp, flax, jute, and tow. C 43 and 34. 521
- 303** Prouty, A. B., Worcester, Mass.—Card-setting machine. D 59. 521
- 305** Gibbs Loom Harness & Reed Co., Clinton, Mass.—Loom harness and reeds used for weaving. C 50. 521
- 305a** Fales, Jenks, & Son, Pawtucket, R. I.—Combined fly frame and speed-ring spinner frame. D 34-35. 521
- 305b** Saco Water Power Machine Shop, Biddeford, Me.—Cotton machinery. C 35-37. 521
- 305c** Long, Jas., Bro., & Co., Philadelphia, Pa.—Power looms. C 57. 521
- 305d** Patent Forced Steel Spring Ring Co., Worcester, Mass.—Steel spring rings. C 34. 521
- 305e** Wolfenden, Shore, & Co., Philadelphia, Pa.—Power loom. D 45. 521
- 305f** Hertle & Thompson, New York, N. Y.—Wire heddles, for weaving woollens, cottons, etc. C 54. 521
- 306** Rockville Traverse Card Grinding Co., Rockville, Conn.—Traverse grinders for woolen and cotton cards and shears. C 50. 521
- 307** Poole, J. Morton, & Co., Wilmington, Del.—C 60. 521
- a* Glazing cylinder for finishing cotton goods. 521
- b* Chilled roll calenders, for paper-making use, ground chilled roll. 521
- 308** Hope & Co., Providence, R. I.—Pantograph engraving machine for calligraphers' plates. C 41. 521
- 309** Ingersoll & Balston, Greenpoint, N. Y.—Hand-power hay and cotton press. C 55. 521
- 310** Butler, Brown, & Co., Providence, R. I.—Ring travelers and belt buckles. C 34. 521
- 311** Ross, L. E., Providence, R. I.—Spring shuttle motion for looms, independent of speed; loom with motion attached. C 36. 521
- 312** Palmer European Patent Texturing & Finishing Machine Co., Norwalk, Conn.—Machinery for stretching, texturing, and drying woven fabrics, laces, etc. C 56. 521
- 313** Providence Machine Co., Providence, R. I.—Roving machinery, card and spinning frame, built by Samuel Slater in 1790. D 36. 521
- 314** Hill, James, Providence, R. I.—Tint filling box, tin cotton can. D 35. 521
- 315** Wood, Thomas, 2106 Wood street, Philadelphia, Pa.—"Star loom" sing box, five leaf; three box loom, 12 harness four box loom-sliding cams; bobbin-winding machine; new style beaming machine; power hoisting machine; patent friction pulley; shafting, couplings, and pulleys; adjustable self-oiling hangers; self-oiling pillow blocks. C 54. 521

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

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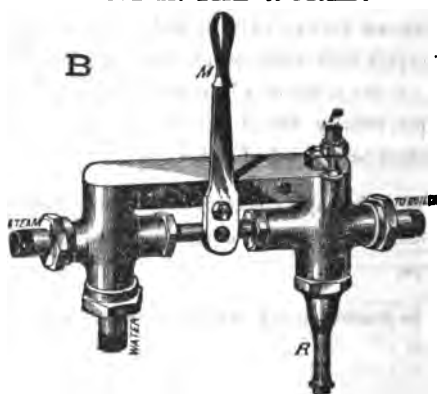
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- 315<sup>s</sup> Smith, J. A. V., Manchester, N. H.—Steel spreader flies. C 66. 521
- 315<sup>s</sup> Wolfendon, Shore & Co., Cardington, Pa.—Narrow loom. D 45. 521
- 316 Eaton & Ayer, Nashua, N. H.—Bobbins, spools, shuttles, skeivers, etc., for spinning and weaving textiles. C 60. 521
- 317 Leonard & Silliman, Bridgeport, Conn.—Mill spindle with driver, step and points. E 56. 521
- 318 Jenckes, E., & Co., Pawtucket, R. I.—King travelers, cotton binding belt holes, spinning rings, cotton and woolen mill supplies. C 35. 521
- 319 Foss & Pevey, Lowell, Mass.—Under-flat cotton card. C 38. 521
- 320 Cleveland Machine Works, Worcester, Mass.—Double-acting gig. D 47. 521
- 320<sup>s</sup> Corner & Cooper, Lowell, Mass.—Cotton stamps for cotton and woolen mills. D 50. 521
- 321 Howard, George C., 13 $\frac{1}{2}$  South Eighteenth street, Philadelphia, Pa.—Folding, rolling, and measuring, strength-testing, shearing, and brushing machines, for carpets or cloths. B 31. 522
- 322 Avery, John G., Worcester, Mass.—Continuous wool spinner. D 53. 522
- 323 Lyall, J. & W., New York, N. Y.—Positive motion looms, weaving various fabrics. C 46 and 49. 522
- 324 Smith, James, & Co., 137 Market street, Philadelphia, Pa.—Machinery for manufacturing fabrics; manufacturers' supplies. Manufacturers of card clothing, oak leather belting, Garnett machines, wool washers, barring machinery, etc.; also, dealers in manufacturers' supplies. Factory, corner of Race and Crown streets. D 62. 522
- 325 Furbush, M. A., & Son, Philadelphia, Pa.—Carding machines, self-acting spinning mule. D 52. 522
- 326 New England Co., Rockville, Conn.—Spooler, warp dresser, reel, beamer. D 46. 522
- 327 Thames River Worsted Co., Norwich, Conn.—Spinning frame with ring and transverse bar. D 48. 522
- 328 Parks & Woolson Machine Co., Springfield, Vt.—Cloth-shearing machine, cloth-brushing machine, etc. Manufacturers of cloth finishing machinery, consisting of improved shearing machines for shearing all kinds of broad and narrow woolen goods, carpet rugs, shawls, etc.; also, double-acting brushing machine and teasing gigs, etc., etc. D 60. 522
- 329 Naylor & Jeffries, Philadelphia, Pa.—Carpet rag looper; adjustable clamp. D 50. 522
- 329<sup>s</sup> Rhodes, Thomas, Philadelphia, Pa.—Yarn beam. D 49. 522
- 329<sup>s</sup> James, B., Worcester, Mass.—Leather head spools for silk, wool, and cotton manufacturers' use. D 50. 522
- 329<sup>s</sup> Dienelt & Eisenhardt, Philadelphia, Pa.—Carpet loom, bobbin-winder, and Jacquard machines. C 55. 522
- 330 Short, James, New Brunswick, N. J.—Positive motion loom for all kinds of carpets. This motion is a differential duplex motion, and is a mechanical motion not before known; all dead centres are obviated by the use of this motion; in looms twenty-five per cent. less power is required and a speed of twenty per cent. increase is gained. The motion is adaptable to all kinds of looms. D 47. 522
- 331 Crabb, William, Newark, N. J., branch, Twentieth and Filbert streets, Philadelphia, Pa.—Hackles, wood and leather card clothing, wool combs, picker teeth, comb pins. Manufacturer of wood and leather card clothing, hackles, gills, picker teeth, wool combs, and all kinds of hackle, gill comb and card pins, and general mill furnishing. C 58. 522
- 332 Butterworth, James, & Son, Philadelphia, Pa.—Rag, waste, and shoddy picker. D 58. 522
- 333 Dornan Bros. & Co., Philadelphia, Pa.—Power loom for weaving without shuttles. Dispensing with complicated "box or shuttle motion," and thereby making great saving in waste. Having almost unlimited capacity for shading colors into the fabric, by means of mails, controlled by the Jacquard machine, cheapness and simplicity of construction, diminished expense in running, by reason of lessened wear and tear, also saving in cost of production, inasmuch as two or more looms can be run by one attendant; lessened service required from loom fixer, and consequent reduction in expense of production, by reason of fixer giving attention to double the quantity of shuttle looms now in use. Cone bobbin-winder.—Winding direct from skein; can be adjusted to wind bobbin from one and a half to eight inches in diameter, having a compensating traveling rod and friction barrels, operating so as to give equal tension on the yarn at all times. Power loom shuttles.—So constructed that the bobbin is prevented from flying up and tearing the warp whilst in operation. Carpet fabric, original designs. D 46. 522
- 334 Silcott, Millikan, & Gold, Washington C. H., O.—Cloth-measuring and rolling machine. D 52. 522
- 336 Hillman, Lewis, Philadelphia, Pa.—Automatic measuring machine. D 43. 522
- 337 Draper, George, & Son, Hopedale, Mass.—Spinning frame, spooler, warper, and creel; twister, spinning rings. C 51. 522
- 338 Whitney, Baxter D., Winchendon, Mass.—Wool-spinning machine. D 53. 522
- 340 Atlas Manufacturing Co., Newark, N. J.—Burr picker, to extract foreign substances from wool; single and double burr machine. C 34, 35. 522
- 341 Crabb, William, Newark, N. J.—Rope-makers' pins, gills. C 63. 524
- 342 Kuh, Sol., Grand Junction, Iowa.—Straw-twister, etc. C 63. 524
- 343 Gavit Machine Works, Philadelphia, Pa.—Paper-making machine and adjuncts. F 69-73. 525
- 344 Lobdell Car-Wheel Co., Wilmington, Del.—Chilled-iron callender rolls for paper. E 65. 525
- 345 Holyoke Machine Co., Holyoke, Mass.—Web callender; beating-rag engine. F 74. 525

## Paper-working, Clothing-making, Sewing Machines.

- 846** Entrekin, William G., Philadelphia, Pa.—Enameiler for burnishing photographs, paper, etc. C 41. 525
- 847** Ross, E. W., & Co., Fulton, N. Y.—Paper mill. F 64, and *outside*. 525
- 847a** Pusey, Jones, & Co., Wilmington, Del.—Wire guides for paper machinery. D 33. 525
- Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.**
- 848** Butler Braider Co., Clinton, Mass.—Braiding machinery. C 42. 530
- 849** Wimpfheimer, Mrs. C., Philadelphia, Pa.—Loom for manufacture of hair-ribbon. C 42. 530
- 850** Suplee Needle Co., New York, N. Y.—Needles for hand and sewing machines. C 8. 530
- 851** Oppenheimer, J. D., Philadelphia, Pa.—Patent process for curling hair by steam or hot water. Manufacturer of real and imitation hair goods. C 43. 530
- 852** Howard, George C., 18½ South Eighteenth street, Philadelphia, Pa.—Forming and pressing machines for straw, felt, leather, and buckram. We also make machines for drawing sheet metal. B 31. 531
- 853** American Buttonhole, Overseaming, & Sewing Machine Co., Philadelphia, Pa.—Sewing machines. C 61. 531
- 854** Franz & Pope Knitting Machine Co., Bucyrus, Ohio.—Automatic knitting machines, seamless hosiery knitting machines; samples of work. C 64. 531
- 855** Wheeler & Wilson Manufacturing Co., Bridgeport, Conn.—Sewing machines and attachments; samples of work. C 44. 531
- 856** Washburn Machine Shop, Worcester, Mass.—American drawing models, adjustable drawing tables. C 38. 531
- 857** Wensley, James, Philadelphia, Pa.—Improvement in buttonhole sewing machines. C 46. 531
- 858** Lamb Knitting Machine Manufacturing Co., Chicopee Falls, Mass.—C 64.  
a Knitting machines. 531  
b Egg beaters. 224
- 859** Howe Machine Co., Bridgeport, Conn.—Sewing machines and attachments; samples of work. C 52. 531
- 860** Rex & Bockius, Philadelphia, Pa.—Sewing machine. C 69. 531
- 861** Bartlett, Joseph W., New York, N. Y.—Reversible sewing machines. C 45. 531
- 862** Wilson Sewing Machine Co., Chicago, Ill.—Sewing machines. C 47. 531
- 863** Billings & Spencer Co., Hartford, Conn.—Sewing machine shuttles, drop-forged and cold-pressed, from bar steel. B 40. 531
- 864** Wilcox & Gibbs Sewing Machine Co., New York, N. Y.—Sewing machines with automatic tension, etc. C 50. 531
- 865** Warth, Albin, Stapleton, N. Y.—Cutting machines for clothing, notching implement for patterns, folding machine. C 70. 531
- 866** United States Corset Co., New York, N. Y.—Corset-weaving power loom. C 46. 531
- 867** DuLaney, G. L., & Co., New York, N. Y.—Sewing machine. C 55 and B 29. 531
- 868** Florence Sewing Machine Co., Florence, Mass.—Sewing machines. C 51. 531
- 869** Davis Sewing Machine Co., Watertown, N. Y.—Sewing machines. C 51. 531
- 869a** Robinson, L. W., Champaign, Ill.—Treadle for sewing and other machines. B 77. 531
- 870** National Suspender Co., New York, N. Y.—Loom for manufacturing suspenders; process of weaving suspenders with the name in; samples of work. C 67-69. 531
- 871** St. John Sewing Machine Co., Springfield, O.—Sewing machines. C 54. 531
- 872** Beckwith Sewing Machine Co., New York, N. Y.—Sewing machines. C 55. 531
- 873** McLean & Benner Machine Co., Philadelphia, Pa.—Sewing machines. C 60. 531
- 874** Johnson, Clark, & Co., Boston, Mass.—Sewing machines. Home, Shuttle, National, and Union sewing machines are furnished for domestic or export trade, at very low prices. The "Home" runs with treadle only; the others by hand or treadle. C 59. 531
- 875** Campbell & Clute, Cohoes, N. Y.—Double table knitting machine, yarn winder, turning-off machine. C 64. 531
- 876** Hart, Wm., jr., 127 North Fourth street, Philadelphia, Pa.—Apparatus for moulding, curving, or round-shaping, pasteboard, brass, and other flexible substances. Patented May 23, 1876. C 65. 531
- 877** Yule, George, Newark, N. J.—Wool forming machine, sizing, stiffening, body stretching, etc., for hatters' use. C 67. 531
- 878** Victor Sewing Machine Co., Middletown, Conn.—Sewing machines, adjustable drill chuck, compensating journal. C 58. 531
- 879** Wagener, Jephth, Holtville, N. Y.—Sewing machines, carriages, and attachments. The great advantages of this machine are its simplicity, general utility, velocity and perfection of work. It is mounted upon a carriage, which is easily thrown on or off the wheels by a child, and is as easily moved from room to room as a child's toy. It makes all the stitches of all the other well-known machines, and is easily changed from one stitch to another by the operator, and, by a new feed device, the ordinary fault of fulling the under layer in a seam is entirely obviated. The especial excellence and superiority of this machine are shown by even a brief inspection of its work. The Wagener has a manufacturing capital of \$2,000,000. C 62. 531
- 880** Whitney Manufacturing Co., Paterson, N. J.—Sewing machines. C 58. 531

or location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

## Clothing-making, Sewing, Washing Machines.

- 381 Singer Manufacturing Co., Elizabethport, N. J.—Sewing machines, samples of work, and case of machine twist. (*Special building.*) 531
- 383 Home Knitter Co., Alliance, O.—One-needle knitter for stockings. C 64. 531
- 382a Decrow, A. W., Bangor, Me.—Sewing machine treadle. E 69. 531
- 384 New York Needle Co., Jersey City, N. J.—Needles, shuttles, and sewing machine attachments. C 66. 531
- 385 Shutt, Daniel, Philadelphia, Pa.—Machine-needle threaders. C 64. 531
- 386 Lathrop Anti-frictionate Co., New York, N. Y.—Anti-frictionate sewing machine. D 68. 531
- 387 Dyson Needle Co., New Britain, Conn.—Spring-needles and points for knitting machines. C 63. 531
- 388 Carpenter, Mrs. Mary P., New York, N. Y.—Sewing machine. C 59. 531
- 389 Haas, Joseph, Philadelphia, Pa.—Ancient knitting machine. C 64. 531
- 390 Hinkley, Jonas, Norwalk, O.—Carpet and floor sweeper, knitting machines. C 62. 531
- 392 Pearson, William, Philadelphia, Pa.—Hosiery-seaming machine. C 62. 531
- 393 Taft, J. C., Providence, R. I.—Sewing machines. C 7. 531
- 394 Hull & Belden Co., Danbury, Conn.—Machine for forming fur hats. C 72, and annex. 531
- 395 Domestic Sewing Machine Co., New York, N. Y.—Sewing machines. C 57. 531
- 396 Bickford, Dana, New York, N. Y.—Automatic knitting machines. C 73. 531
- 397 Willis, Charles E., Oyater Bay, N. Y.—Sewing machine feed. C 65. 531
- 398 Secor Sewing Machine Co., Bridgeport, Conn.—Family sewing machines. C 59. 531
- 398a Boles' Universal Feed-machine Co., New York, N. Y.—Sewing machines and attachments. C 42. 531
- 399 Wardwell Manufacturing Co., St. Louis, Mo.—Family sewing machine. Makes a perfect lock-stitch, direct from two store spools; dispenses with the shuttle, bobbin, and tiresome rewinding of under-thread; its needle is self-sewing and self-fastening; feeds in any direction; is noiseless, simple, light-running, always in order, and its use saves much valuable time and labor. Ladies should examine it before buying. C 67 and 68. 531
- 400 National Hat-Pouncing Machine Co., New York, N. Y.—Machinery to shear the surface of fur and wool hats. C 70. 531
- 401 Eickmeyer Hat-Blocking Machine Co., New York, N. Y.—Machinery to stretch, block, iron, and sew sweats into fur and wool hats. C 70. 531
- 402 Cuming, M. A., New York, N. Y.—Hand-power hydraulic hat press. C 62. 531
- 403 Fish, Warren L., Newark, N. J.—Sewing machines. C 46. 531
- 404 McCloskey, John, Brooklyn, N. Y.—Sewing machines. C 59. 531
- 404a Hawley & Branson, Chicago, Ill.—Knitting machines. C 66. 531
- 404b Weed Sewing Machine Co., Hartford, Conn.—Sewing machines and samples of work. C 45. 531
- 404c Remington, E., & Sons, Ilion, N. Y.—Sewing machines; samples of work. C 49. 531
- 404d United States Sewing Machine Co., New York, N. Y.—Sewing machines. C 62. 531
- 404e Pusey, Jones, & Co., Wilmington, Del.—Morocco glazing machine. D 33. 531
- 405 Oakley & Keating, New York, N. Y.—Washing machine. E 80. 534
- 406 Buck, Isaiah D., Conshohocken, Pa.—Suction washing machine. E 77. 534
- 407 Woods, George, & Co., Cambridgeport, Mass.—Drying process. E 78. 534
- 408 Lewis, Rufus S., New Hampton, N. H.—Ironer and polisher for laundry use. E 77. 534
- 409 Sternberger, Leopold, Philadelphia, Pa.—Steam starching, ironing, and polishing machines for laundries. Patent right of starching machine for sale. Address L. Sternberger, 503 Market street, Philadelphia. E 76. 534
- 410 Calkins Champion Washer Co., Chicago, Ill.—Washing machine. E 77. 534
- 410a Barnard, A. B., West Fitchburg, Mass.—Mangles. E 78. 534
- 410b Howland, W. Penn, Auburn, N. Y.—Mangles. E 78. 534
- 410c Short, S., Cincinnati, O.—Mangle and ironer; blanket washing machine. E 77. 534
- 410d Pratt, Jas. W., Philadelphia, Pa.—Laundry washer. E 78. 534
- 411 York Manufacturing Co., York, Pa.—Washing machine. D 78. 534
- 411a Standard Laundry Machinery Co., Boston, Mass.—Washing, starching and wringing machines. E 77. 534
- 412 Bing, James, Philadelphia, Pa.—Mangle. E 77. 534
- 413 Walker, W. B., Boston, Mass.—Machine for pressing garments; smoothing-iron and sad-irons. E 79. 534
- 414 Briggs, Nicholas A., Shaker Village, N. H.—Shaker washing machine. E 79. 534
- 415 Burt & Putnam, Rockville, Conn.—Washer for scouring cloth. E 78. 534
- 415a Uhlinger, W. P., Philadelphia, Pa.—Centrifugal hydro-extractor. (*Pump Annex 8-10.*) 534
- 416 Felder, Charles, New York, N. Y.—Plaiting, pinking, fluting, and crimping machines. C 62. 534
- 417 Storrs, Levi B., Canton, N. Y.—Pressing machines for tailors use. E 79. 534
- 418 American Watch Tool Co., Waltham, Mass.—Watch lathes and attachments, with all modern improvements, as used in the best American watch factories; model and astronomical instrument mak-

## Watch-making, Printing Machines.

- ers' lathes. Hill, Clarke, & Co., agents, 131 Milk street, Boston, Mass. C 41 and D 40. 535
- 419** Hopkins, C., Waltham, Mass.—Machinery and tools for making and repairing watches. C 41. 535
- 420** Stilwell & Bierce, Newark, N. J.—Jewelers' lathes, foot-press for rolling-mill, gold ingot. D 80. 536
- 421** National Needle Co., Springfield, Mass.—Machine for making hand and sewing-machine needles. C 40. 537
- 422** Pyramid Pin Co., New Haven, Conn.—Machine for sticking pins in paper. Also the processes of rolling, boxing, and finishing, in a pyramidal form, the same number of pins (360) usually sold on papers. This company make no cheap pins, but manufacture exclusively from the best spring-tempered brass wire, thus offering to consumers fine pins, in compact and convenient form for toilet, office, and work-basket. C 42-43. 537
- Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.**
- 424** Howard, George C., 13½ South Eighteenth street, Philadelphia, Pa.—Plate press for steel, copper, or zinc plate burnishers; power machines, ink, wipe, polish, and print twelve per minute. Screw printing, embossing, punching, and cutting press. Perforating or cutting machines for stamps, checks, sheet metal. Rotary and direct acting, heavy punching, cutting, and bending machines for metal. B 31. 540
- 425** Kelsey, W. A., & Co., Meriden, Conn.—Portable printing presses. F 32. 540
- 426** Hickok, W. O., Harrisburg, Pa.—Paper-ruling machines, head-striking machine, book-binders' standing press, and board cutter. F 34. 540
- 427** Gordon, George P., New York, N. Y.—Printing presses. F 34-36. 540
- 428** Potter, C., jr., & Co., 12 and 14 Spruce street, New York, N. Y.—Builders of book, job, newspaper, printing, and lithographic presses. Warranted perfect in every respect, and with all the latest improvements of the age. F 28-29. 540
- 429** Rex & Bockius, Philadelphia, Pa.—Printing presses. C 69. 540
- 430** Hooyer, H., & Co., Philadelphia, Pa.—Printing presses. E 45. 540
- 431** Lent, A. B., Philadelphia, Pa.—Press for printing steel and copper plates. E 27. 540
- 432** Degener & Weiler, New York, N. Y.—Printing machines. F 30. 540
- 433** Golding & Co., Boston, Mass.—Printing presses, printers' tools. E 31. 540
- 434** Rosenthal, Isador, New York, N. Y.—Apparatus for stamping patterns of ladies' garments. E 32. 540
- 435** Hammett, L. C., Philadelphia, Pa.—Printers' rollers and composition. E 40. 540
- 436** O'Shea, Andrew J., Jersey City, N. J.—Devices for registering printing. E 29. 540
- 437** Bagger, Louis, Washington, D. C.—Printing press using compound lithographic stones. E 31. 540
- 438** Gally, M., New York, N. Y.—Two printing presses. E 31. 540
- 439** Bullock Printing Press Co., Philadelphia, Pa.—Printing presses and stereotyping machinery. E 25. 540
- 440** Cottrell & Babcock, New York, N. Y.—Stop-cylinder press, roller-drum cylinder press, perfecting press for illustrated cut work. F 26-27. 540
- 440a** Kneass, N. B., jr., Philadelphia, Pa.—Press, type, and plates for printing literature and music for the blind. Special men work. E 32. 540
- 441** Child, C. C., Boston, Mass.—Printing presses. F 32. 540
- 442** Daughaday, J. W., & Co., Philadelphia, Pa.—Printing press, self-feeding attachment. E 31. 540
- 443** Woods, B. O., & Co., Boston, Mass.—Amateur printing presses, improved type cases. E 30. 540
- 444** Dickson, John, & Co., Philadelphia, Pa.—Engraving on vulcanized rubber for printing on letter-press. E 32. 540
- 445** Ferre, Samuel P., Philadelphia, Pa.—Chromotype cylinder printing press, prints five colors at once. E 32. 540
- 446** Rose & McDondald, Philadelphia, Pa.—Roller-combs and rollers. E 40. 540
- 447** Kurts, H. I., Philadelphia, Pa.—Process of manufacturing lithographic pictures, with specimens. E 34. 540
- 448** Hoe, R. R., & Co., New York, N. Y.—Printing presses. E 30 to 37. 540
- 449** MacLachlan, Hopkins, & Co., New York, N. Y.—Paging and numbering machine. D 25. 540
- 450** Campbell Printing Press & Manufacturing Co., Brooklyn, N. Y.—Printing presses and auxiliaries, printers' material. E 28. 540
- 451** Parks, John A., New York, N. Y.—Hand and scraper pattern power lithographic printing presses. F 25. 540
- 452** Boston & Fairhaven Iron Works, Fairhaven, Mass.—Newspaper and job printing press. F 25. 540
- 453** Loag, Samuel, Philadelphia, Pa.—Designs and specimens of color printing from blocks and plates; plate engraved by acid process. E 30. 540
- 454** Howell & Bros., Philadelphia, Pa.—Cutting off and rolling machine, hanging up and hardening machines. F 55-80. 540
- 454a** Waldron, J. E., New Brunswick, N. J.—Wall paper printing machine and turn-around racks. F 80. 540
- 455** Gorham, W. B., & Co., Boston, Mass.—Rotary, lever, and treadle presses. E 26, 28. 540
- 456** Mann, Wm. H., Philadelphia, Pa.—Steam paging and numbering machine. E 32. 540
- 457** Newbury, A., & B., Coxsackie, N. Y.—Printing press. F 33. 540

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.



## Printing, Book-making, Paper-working Machines.

- 457a Nelson, M., New York, N. Y.—  
Printing machine. E 31. 540
- 457b Johnson, Charles E., Philadelphia,  
Pa.—Automatic paper-feeding machine.  
E 35. 540
- 457c Pusey, Jones, & Co., Wilmington,  
Del.—Forming cylinder; calender rolls.  
D 33. 540
- 457d Burgess Proof Press Co., Belfast,  
Me.—Proof press. F 32. 540
- 457e Gally, Merritt, New York, N. Y.—  
Job printing press; magneto-mechanical  
perforator. E 28. 540
- 458 Globe Manufacturing Co., Palmyra,  
N. Y.—E 28. 540  
a Printing presses. 540  
b Paper cutters. 546
- 459 Mackellar, Smiths & Jordan, Phila-  
delphia, Pa.—Type founding machinery  
for casting and finishing types, types and  
printing materials. E 28, 29-38. 541
- 460 Armstrong, John M., Philadelphia,  
Pa.—Electrotyped music plates; books  
and sheet music. E 40. 541
- 461 Grant, Geo. B., Boston, Mass.—Cal-  
culating machines. E 44. 542
- 462 Bala, John W., 532 Walnut street,  
Philadelphia, Pa.—Type-writer; super-  
sedes the pen, faster, manifolds, keys like  
a piano; children, blind, and aged, print  
at once. C. O. D., \$125. John W. Bain,  
general agent (to whom all orders must  
be sent). E 40. 542
- 463 Pratt, John, Centre, Ala.—Type-  
writing machine. E 40. 542
- 464 Standard Laundry Machinery Co.,  
Boston, Mass.—Telegraph copying ma-  
chine. E 77. 542
- 465 Page, Wm. H., & Co., Greenville,  
Conn.—Wood type, specimen books of  
wood type. E 40. 542
- 466 Bruce's, Geo. Son, & Co., New York,  
N. Y.—Book of printing types, and cases  
of samples of printing types. E 5. 542
- 467 Hoffman & Hoyt, New York, N. Y.—  
Copying presses. E 40. 542
- 468 Westcott, C. J., New York, N. Y.—  
Machine for casting, dressing, and setting  
type. E 29. 541
- 469 Brainard, Charles R., Boston,  
Mass.—"Bank" and copy distributor for  
printing office. E 40. 542
- 470 Novelty Paper Box Co., Philadel-  
phia, Pa.—Book stitching and sewing ma-  
chines. D 23. 544
- 471 Marshall, Son, & Co., Boston, Mass.—  
Bookbinders', printers', and paper-box  
manufacturers' shears and machinery. E  
26-27. 544
- 472 Automatic Book-Sewing Machine  
Co., Milford, Conn.—Book-sewing, pam-  
phlet wire-stitching, and magnetic fasting  
machines. F 33. 544
- 473 Standard Machinery Co., Mystic  
River, Conn.—Steam rounding and back-  
ing machine, automatic book trimmer, and  
power paper cutter. E 40. 544
- 474 Semple, Mary H., Lowell, Mass.—  
Steam cutter for bookbinders' use. F  
33. 544
- 475 Wm. F. Murphy's Sons, Philadel-  
phia, Pa.—F 34-36. 544  
a Blank-book manufacture and printing  
office. 544  
b Paper-cutting machine. 546
- 476 Francis & Loutrel, New York, N.  
Y.—Folding machine for blank-book  
makers and paper mills. F 34-36. 545
- 477 Forsaith, S. C., & Co., Manchester,  
N. H.—Newspaper folding machine. E  
39, and Annex I. 545
- 478 Chambers, Bro., & Co., Philadel-  
phia, Pa.—Newspaper folder, paster, and  
trimmer; book-folder; periodical folder,  
paster, and coverer. D 23. 543
- 479 Clagne, Randall, & Co., Rochester,  
N. Y.—Machine for covering pamphlets.  
D 23. 545
- 480 Jaeger, Gustav L., 69, 71 Woos-  
ter street, New York, N. Y.—Machine  
for pasting and combining any kind of pa-  
per, pasteboards, or textile fabrics; fin-  
ishes fifteen thousand sheets a day. Pa-  
tent-rights for sale. D 24. 546
- 481 Brown & Carver, Philadelphia, Pa.—  
Card and paper cutters. E 26-27. 546
- 482 Beck, Charles, Philadelphia, Pa.—  
Machinery for making paper boxes and  
cutting paper. D 25. 546
- 482a Sanborn, Geo. H., New York, N.  
Y.—Paper cutters, knife grinder, em-  
bossor, stabbing, and backing machines.  
D 24. 546
- 483 Child, C. C., Boston, Mass.—Paper  
cutter. F 32. 546
- 484 Cleveland Paper Box Machine Co.,  
Cleveland, O.—Sole manufacturers of  
machine for making paper boxes; also,  
cutting press, nicking machine for blanks,  
and box knives. This machine glues,  
folds, makes, dries, and discharges the  
box, having a capacity of fifteen thou-  
sand a day. D 25. 546
- 485 Riehl, M., & Sons, Philadelphia, Pa.—  
Self-clamping book-cutting machine and  
paper-cutting machine. D 25. 546
- 486 Kerr, Norman M., & Co., Philadel-  
phia, Pa.—Manufacture of paper boxes.  
D 25. 546
- 487 Boomer & Boschert Press Co.,  
Syracuse, N. Y.—Copying press, paper  
presses, glue press, leather-binding press,  
cloth-baling press. Packer's press for  
tank refuse—power, three hundred tons;  
standing and bookbinders' presses, Nos.  
1, 2, and 3—power, 30, 80, 120, and 200  
tons. Cloth-baling press—power, 250 tons.  
Copying press for banks, freight, and post-  
offices—power 20 tons. (For presses for  
cider or lard, see *Agricultural Hall, S  
and T 12*.) E 39. 546
- 487a Bass, Joseph P., Bangor, Me.—  
Burnisher for polishing photographs. B  
30. 546
- 488 Curtis & Mitchell, Boston, Mass.—  
Paper cutters, self-inking printing presses,  
card cutters, etc. D 24. 546
- 489 Sheridan, E. R. & T. W., New  
York, N. Y.—Paper cutters, book trim-  
mer, shears, presses, sawing machine, etc.  
D 25. 546
- 490 Packer, Charles W., Philadelphia,  
Pa.—Machines for cutting card board. D  
25. 546

## Paper-working Machines, Engines, Boilers, etc.

- 491 Vanhorn & Cranston, Brooklyn, N. Y.**—Paper-cutting machines. E 28. 546
- 492 Lockwood, W. E. & E. D.** 255 South Third street, Philadelphia, Pa.—Patent automatic envelope machine, which cuts, folds, gums, and counts 120 envelopes a minute. Automatic self-feeding envelope printing machine; capacity 6,000 an hour. Paper collar machine, which cuts, stamps, button-holes, and finishes 30,000 collars a day. Seed-bag envelope machines; envelope cutting press; small drug envelope machine. (*Section D 3, post 27, centre aisle.*) 547
- 493 Hoole, John R., New York, N. Y.**—Perforating machine for checks, stamps, tickets, etc.; paging and numbering machine, for paging blank books and numbering bank notes, checks, coupons, tickets, etc. F 34-36. 547
- 494 Cohen, Chas. J., Philadelphia, Pa.**—Machine for folding, gumming, and finishing self-sealing envelopes. D 26. 547
- 494a Raynor, Samuel, & Co., New York, N. Y.**—Envelope machine. D 25. 547

## Motors and Apparatus for the Generation and Transmission of Power.

- 495 Williamson Bros., Philadelphia, Pa.**—Portable and stationary hoisting engines, with spur and frictional gearing. D 79, and boiler house 4. 550
- 496 Tupper, Lorenzo B., New York, N. Y.**—Furnace grate bars. D 76. 550
- 497 Connery, James W., Philadelphia, Pa.**—Concave calking for steam boilers, iron ships, and metallic vessels. D 76. 550
- 498 Tupper, W. W., & Co., New York, N. Y.**—Grates for steam boiler furnaces, etc. D 78. 550
- 499 Frick & Co., Waynesborough, Pa.**—Portable farm and stationary engines. D 75, and boiler house 4. 550
- 500 Bigelow, H. B., & Co., New Haven, Conn.**—Combined and independent engines and boilers. D 71. 550
- 501 Steam Generator Manufacturing Co. of Pennsylvania, Philadelphia, Pa.**—Sectional boiler. (*Boiler house 4.*) 550
- 502 American Engine Co., Jersey City, N. J.**—Engines and thresher locomotive. D 75. 550
- 503 Shaw, Thomas, 915 Ridge avenue, Philadelphia, Pa.**—Steam and vacuum gauges, test pumps, air chamber feeder, hydraulic valves and gauges. Cushion-seated valves, exhaust nozzles, planer bar. Gauge is free of springs, and measures by weight alone; has been adopted by United States Government and principal establishments as standard of pressure. Test pumps are of superior make and finish, adapted to pressure in small quantities, to every pressure desired. Air-chamber feeder, a useful invention; utilizes vibrations of water in pump to supply air-chambers with air. Hydraulic stop-valve; controls the highest pressure without leakage; has threaded seat. Cushion-seated valve; uses face of valve as dash-pot; prevents pounding. Exhaust nozzle absorbs noise of exhaust steam, and arrests sparks in locomotives. Planer bar, doubles the capacity, of iron planers; reaches through work. D 69. 550
- 504 Reed, John A., New York, N. Y.**—Tapering corrugated sectional boilers. D 77. 550
- 505 Steigert, Leopold, Cincinnati, O.**—Meat-chopping machines, with engine attachments, horizontal engine. D 78. 550
- 506 Bent, Samuel S., New York, N. Y.**—Shaking grate bars for steam boilers, etc. E 75. 550
- 507 Harrison Boiler Works, Philadelphia, Pa.**—Sectional safety steam boiler. First class bronze medal, London, 1862; first class bronze medal, New York, 1863; gold and silver Rumford medals, Boston, 1871; first class silver medal, Philadelphia 1874. *Section D 77, and boiler house No. 4.* 550
- 508 Babcock & Wilcox, New York, N. Y.**—Sectional safety steam boiler. (*Boiler house 3.*) 550
- 509 Meissner, Julius H., Philadelphia, Pa.**—Shelving grates and furnaces. E 76. 550
- 510 Shore Bros., Philadelphia, Pa.**—Boiler feed, belt pumps, steam pump. E 75. 550
- 511 Houghton, R. J., New York, N. Y.**—Boiler and tube compound for removing and preventing scale; specimens of scale. E 76. 550
- 512 Snyder, Ward B., New York, N. Y.**—Steam engine. Snyder's Little Giant steam engine, one-horse power complete, with tubular boiler, \$150; two-horse power, \$200; three-horse power, \$250. Send for circular. Factory, 84 Fulton street, N. Y. B 71. 550
- 513 Howard Safety Boiler Manufacturing Co., Boston, Mass.**—Safety sectional wrought-iron nine-inch tube boiler. (*Boiler house 3.*) 550
- 514 Ames Iron Works, Oswego, N. Y.**—Portable steam engines. B 74, and boiler house. 550
- 516 Erie City Iron Works, Erie, Pa.**—Horizontal tubular boiler, portable engines, farm engine with vertical boiler and horizontal engine. C 76. 550
- 516a Springfield Iron Works, Springfield, Mo.**—Turbine water wheel. D 8a. 550
- 517 Ryder Reciprocal Grate Association, Taunton, Mass.**—Reciprocal grates. Books on grates, combustion, and results of tests, sent free. D 68. 550
- 518 Lowe & Watson, Bridgeport, Conn.**—Steam boiler. Lowe's patent steam boiler, made entirely of steel plates; proved by eight years' use, under all conditions, to be safe, durable, reliable, and very economical of fuel. Great and uniform steaming capacity. Process of combustion (smokeless with any fuel) obtained in construction and setting. (*Boiler house 3.*) 550
- 519 Chalmers Spence Co., Philadelphia, Pa.**—Composition boiler and steam pipe covering; tube cleaner. D 78. 550
- 520 Shuster, John T., Philadelphia, Pa.**—Boiler and pipe covering. D 78. 550

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

## Engines, Boilers.

- 521** Murrill & Keizer, Baltimore, Md.—Automatic damper regulator for steam boilers. D 64, and *Pump annex.* 550
- 522** Baird & Huston, Philadelphia, Pa.—Horizontal tubular boiler. D 38 to 403 550
- 523** Exeter Machine Works, 140 Congress street, Boston, Mass.—Sectional independent expansion and contraction boiler. Following is extract from report of the Franklin Institute, Philadelphia, Sept. 29, 1875, as to its safety qualities: "The Exeter Sectional Boiler" comes very near to it, if it does not solve that difficult problem of uniting small compartments composing a boiler of considerable size, and at the same time provide for the free escape of steam without lifting the water. Many sectional boilers are so constructed in combining their parts as to cause the steam generated in the lower portion of the apparatus to force its way in zig-zag courses through a whole neighborhood of narrow passages, or through a number of long, comparatively small and nearly horizontal tubes, into which it is quite impossible for the water to promptly follow, as it should do, in order to maintain perfect circulation and take up all the transmitted heat before effecting its escape. The water in the "Exeter" section exists in vertical masses about  $3\frac{1}{4}$  inches square and 28 inches high, a form favorable to the ready liberation of the steam to and from the surface of the water, and securing at the same time prompt circulation and supply of water to the heated surfaces of the boiler. \* \* \* We find, on careful and extended inquiry, that the "Exeter boiler," thus far in its existence and service, has an excellent record sufficient to justify us in making the assertion that it is equally as safe as any sectional boiler in the market known to us. We have not found any evidence, whether derived from the severest experimental tests to which a boiler can be subjected, or from long continued daily use, under the ordinary working conditions in the factory, which would prove it to be dangerous as a generator of steam. (*Boiler house 3.*) 550
- 524** Hoadley Co., J. C., Lawrence, Mass.—Portable steam engines, with or without wagons, various sizes, 9 to 100 horse power; automatic variable cut-off, giving uniform speed and great economy of fuel, requiring only 21 to 30 pounds of feed water, and 3 to  $3\frac{1}{4}$  pounds of coal per horse power per hour. Cheap, light, compact, durable, safe, convenient, economical. D 80. 550
- 525** Kelley, Wm. E., New Brunswick, N. J.—Sectional safety boiler. (*Pump annex, and boiler house.*) 550
- 525a** Smith, S. Decatur, Philadelphia, Pa.—Skeleton grate bar. E 77. 550
- 525b** Potts Bros., Pottstown, Pa.—Flanged boiler iron, and boiler flue iron. B 24-25. 550
- 525c** Wilson, Benj. F., Philadelphia, Pa.—Shuttle and stop valves. B 70. 550
- 525d** Hoyt, J. B., New York, N. Y.—Steam generating furnace, for the perfect combustion of all the gases in bituminous coal, thereby preventing smoke. (*Boiler house 6.*) 550
- 525e** O'Hara, Charles M., Boston, Mass.—Ash felting for steam pipes. B 69-71. 550
- 525f** Winans, H. N., New York, N. Y.—Boiler powder, compounds and liquids; anti-incrustators; boiler cleaner. D 78. 550
- 526** Lovegrove & Co., Philadelphia, Pa.—Vertical tubular boilers. B 75, and *boiler house 4.* 550
- 527** Armstrong Heater Manufacturing Co., Toledo, O.—Improved heater, lime extractor, condenser, adjustable feed pump for steam boilers. D 74. 550
- 527a** Hanmore, Jno. W., Newburgh, N. Y.—Comb felting, blast pipes, vacuum pans, etc. B 71. 550
- 527b** McConn, John, Philadelphia, Pa.—Radiators, for steam or water, and boiler. E 76. 550
- 527c** Miller, Charles B., Philadelphia, Pa.—Steam generator. (*Boiler house 4.*) 550
- 528** Firmenich, J., Buffalo, N. Y.—Steam boiler. (*Boiler house 4.*) 550
- 529** Ellis, Charles R., New York, N. Y.—Hot-water apparatus for heating buildings. D 75. 550
- 530** Haskins Steam Engine Co., John F. Haskins, Fitchburg, Mass.—Interchangeably-made vertical steam engines. C 10-74, and *boiler house 4.* 550
- 531** Kreider, Campbell, & Co., Philadelphia, Pa.—Horizontal steam engine. E 50. 550
- 532** American Road Steamer Co., Philadelphia, Pa.—Road steamer. E 80. 550
- 533** Hartford Steam Boiler Inspection & Insurance Co., Hartford, Conn.—Incrustation, scale, and defective iron from steam boilers, fragments of exploded boilers. D 76. 550
- 534** Colt's Patent Fire Arms Manufacturing Co., Hartford, Conn.—Steam engines, steam cylinder in boiler, interchangeable parts. D 74, and *boiler house 4, and quartz mill.* 550
- 535** Sample, McElroy, & Co., Keokuk, Iowa.—Semi-portable steam engine and boiler. This firm makes a specialty of manufacturing these engines, and are prepared to fill orders promptly, if addressed as above. D 77. 550
- 536** Payne, B. W., & Sons, Corning, N. Y.—Vertical engines with safety boilers; 3 to 4 horse power; impossible to explode; price, \$250, complete, except smoke stack. (*Boiler house 4.*) 550
- 538** Vail, S. S., Keokuk, Iowa.—Reversible steam boiler, with automatic fuel feed. To remove scales, reverse ends. Convenient to clean or repair. Rights for sale. C 77. 550
- 539** Lynde, J. D., Philadelphia, Pa.—Safety boiler. B 71, and *boiler house 4.* 550
- 540** Peirce Rotary Tubular Boiler Co., New York, N. Y.—Rotary tubular steam boiler. (*Boiler house 5.*) 550
- 541** Smith, Charles D., Boston, Mass.—Steam tubular boiler, steam boiler furnace and setting grate bars; glass water gauge. C, and *boiler house 3.* 550
- 542** Gillis & Geoghegan, New York, N. Y.—Boiler feeder and steam trap. (*Boiler house 6.*) 550

## Engines, Boilers, Water-Wheels.

- 543 Harrold, George W., Rochester, N. Y.**—Automatic steam trap. D 64. 550
- 544 Johns, H. W., New York, N. Y.**—F 64.
- a* Asbestos roofing, asbestos cement felting, lined hair felt. 228
- b* Asbestos steam packing. 555
- 545 Skinner & Wood, Erie, Pa.**—C 78.
- a* Horizontal return flue boiler; variable grate surface for wood or coal. 550
- b* Portable engine, stop motion governor, self-oiling connecting rod, combined check, stop, and relief valve. 552
- 545a Starr, William M., Tyler, Texas.**—D 78.
- a* Water wheel, car starter, glass cutter, etc. 581
- b* Road engine. 552
- 546 Sellers, William, & Co., Philadelphia, Pa.**—C 18-25, and Annex 1.
- a* Injectors. 550
- b* Three cylinder engines. 552
- c* Shafting, hangers, couplings. 553
- 547 Haworth, James, Philadelphia, Pa.**—Turbines, driven by hydrant-water power. D 73. 551
- 548 Lane Manufacturing Co., Montpelier, Vt.**—Monitor turbine water-wheel. Sets in open flume or in a closed curb; perfectly balanced cylindrical gate; water applied upon the entire periphery of wheel. A 4, 35-36. 551
- 549 Grier, W. W., Hulton, Pa.**—Hydraulic ram sentinel. D 79. 551
- 550 Stout, Mills, & Temple, Dayton, O.**—Turbine water-wheels with and without flumes. Thousands of these wheels are in successful operation, driving all kinds of machinery. They have been introduced into nearly every civilized country in the world. They produce a very high percentage of power, are compact and durable. Call at Machinery Hall, and get descriptive catalogue, or address proprietors as above. D 80. 551
- 551 Stilwell & Bierce Manufacturing Co., Dayton, O.**—Double turbine water-wheel, simple, durable, and powerful. D 80. 551
- 552 Dexter Spring Co., Hulton, Pa.**—Carriage spring, in connection with fifth wheel. D 79. 551
- 553 Leffel, James, & Co., Springfield, O., and 100 Liberty street, New York.**—Double turbine water-wheel. D 77. 551
- 554 Chase Turbine Manufacturing Co., Orange, Mass.**—Turbine wheels. (*Pump annex.*) 551
- 555 Wolf, Abraham N., Allentown, Pa.**—Turbine water-wheel and flume. (*Pump annex.*) 551
- 556 Buzby, Albert G., Philadelphia, Pa.**—Water motor from hydrant pressure; model of centripetal railway. D 79. 551
- 557 Bodine Manufacturing Co., Mt. Morris, N. Y.**—Brass turbine water-wheel. D 79. 551
- 558 Valentine, Wm. J., Fort Edward, N. Y.**—Turbines, with and without register gates; hydraulic motor. D 79. 551
- 559 Wright & Rogers, Minneapolis, Minn.**—Stationary, portable, locomotive, and marine steam engine. D 79. 551
- 560 Mosser, Wm. F., & Co., Allentown, Pa.**—Turbine water-wheel. A 48, and *Pump annex.* 551
- 561 Wright, James, Minneapolis, Minn.**—Cylinder meter motor. D 79. 551
- 562 Springfield Iron Works, Springfield, Mo.**—Turbine wheel. D 8a. 551
- 563 Bing, James, Philadelphia, Pa.**—Turbine water-wheel. E 77. 551
- 564 Poole & Hunt, Baltimore, Md.**—Turbine water-wheels and gearing. C 79. 551
- 565 Cox & Sons, Bridgeton, N. J.**—Turbine water-wheels. C 32. 551
- 566 York Manufacturing Co., York, Pa.**—Turbine water-wheels. D 78. 551
- 567 National Water-Wheel Co., Bristol, Conn.**—Turbine water-wheels. D 77. 551
- 568 Barber & Son, Allentown, Pa.**—Globe flume, with turbine wheel. D 77. 551
- 569 Brown, Son, & Co., Brookville, Pa.**—Turbine water-wheels. D 78. 551
- 570 Cope, E. T., & Sons, West Chester, Pa.**—Turbine water-wheel, with watertight gates opening separately. (*Pump annex.*) 551
- 571 Bollinger, O. J., York, Pa.**—Turbine water-wheel. (*Pump annex.*) 551
- 572 Risdon, T. H., & Co., Mount Holly, N. J.**—Turbine water-wheel. Many sizes of this wheel, at tests by different engineers, and under different conditions, have given over 90 per cent. of the power of the water consumed. (*Pump annex.*) 551
- 573 Walton, Silas, Moorestown, N. J.**—Turbine water-wheel. (*Pump annex.*) 551
- 574 Alcott, Thos. J., Mount Holly, N. J.**—Turbine water-wheel. D 78. 551
- 575 Tait, Thomas, Rochester, N. Y.**—Water-wheel. The guides form wedge-shaped openings under all degrees, cutting water off at periphery of wheel; counterpoising under any hydrostatic pressure. Surface joints prevent water escapement between curb and wheel. (*Pump annex.*) 551
- 576 Knowlton & Dolan, Logansport, Ind.**—"Little Giant" turbine water-wheel, noted for economy in the use of water, and durability. (*Pump annex.*) 551
- 576a Howbin, W. T., Cohoes, N. Y.**—Water-wheel governor; rollers. D 74. 551
- 576b Burnham, N. F., York, Pa.**—Turbine water-wheel. (*Pump annex.*) 551
- 576c Capron Water-Wheel Manufacturing Co., Hudson, N. Y.**—Water-wheels. D 77. 551
- 576d Rodney Machine Co., Orange, Mass.**
- a* Double-acting turbine water-wheel. (*Pump annex.*) 551
- b* Rotary felling mill. D 45. 551
- 577 Folsom, Andrew, Barrington, R. I.**—Wheel constructed to operate in the direction of wind or water. (*Pump annex.*) 551
- 578 Peirce, Milton P., Wenonah, N. J.**
- a* Turbine water-wheel. C 80. 551
- b* Portable steam engine. D 78. 551

## Engines, Boilers.

- 579 Abendroth & Root Manufacturing Co., 96 Liberty street, New York, N. Y.—Wrought iron sectional safety boiler. These boilers were introduced to the public in 1867. There is now over forty-five thousand horse-power in use in all parts of the world. (*Boiler house 3.*) 552
- 580 Fields, Wm., Wilmington, Del.—Motor-power model-dumping coal wagon. B 79. 552
- 581 Bolles, J. N., Baltimore, Md.—Steam engine. (*Outside.*) 552
- 582 Cobb, Z., & Sons, Wilmington, Del.—Water engine for sewing machines, etc. E 68. 552
- 583 Wetherill, Robt., & Co., Chester, Pa.—Steam engine, with self-packing piston. B 69. 552
- 584 Baird & Huston, Philadelphia, Pa.—Steam engines. D 38-40. 552
- 585 Lobdell Car Wheel Co., Wilmington, Del.—Portable steam engine and boiler. E 65. 552
- 586 Cornell University Machine Shop, Ithaca, N. Y.—Steam engine. B 68. 552
- 587 Rider, Wooster, & Co., Walden, N. Y.—Compression engines, operating without valves, using compressed and heated air. B 80. 552
- 588 Lovegrove & Co., Philadelphia, Pa.—Steam engine. B 75, and *Boiler house 4.* 552
- 589 Jerome, William R., Philadelphia, Pa.—Electro-magnetic motor, for running sewing machines, etc. B 69. 552
- 590 Dudgeon, Richard, New York, N. Y.—Rotary engine. C 27. 552
- 590a Murray Iron Works Co., Burlington, Iowa.—Steam engine. E 60. 552
- 590b Brayton, George B., Philadelphia, Pa.—Hydro-carbon engine. A 71. 552
- 591 Wardwell, George J., Rutland, Vt.—Stationary and portable valveless steam engines. B 77. 552
- 592 Moorhouse, R. O., & Co., Philadelphia, Pa.—Steam engine, with gear for variable expansion adjusted by the governor. B 73. 552
- 593 Hawley, Henry Q., Albany, N. Y.—C 75. 552  
a Water motors. 551  
b Gas heating and cooking furnaces. 552
- 594 Buckeye Engine Co., Salem, O.—Automatic cut-off and throttling steam engines. B 70. 552
- 595 Hussey, Charles A., New York, N. Y.—Electro-magnetic engines. E 69. 552
- 596 Gladwin, Charles P., Philadelphia, Pa.—Plain-slide valve steam engines with governor and automatic stop and speeder. B 71, and C 77. 552
- 597 Lidgerwood Manufacturing Co., New York, N. Y.—Hoisting and elevating engines. B 79, and *Annex 3.* 552
- 598 Carlisle, Mason, & Co., Chicago, Ill.—Chain elevating machinery. C 76. 552
- 599 Shapley & Wells, Binghamton, N. Y.—Steam engines. D 80, and *Boiler house 4.* 552
- 599a Russell, William D., New York, N. Y.—Engines. (*Outside of building.*) 552
- 599b Butterworth, H. W., & Sons, Philadelphia, Pa.—Sheet iron; tin cans. D 44 to 48. 552
- 599c Baxter Steam Engine Co., New York, N. Y.—Steam engines; in use in Gillinder & Sons' glass-house and in Nevada State building. 552
- 599d Wiener & Strong, Pittston, Pa.—Horizontal engine. B 71. 552
- 599e Forbes, J. W., Chicago, Ill.—Quartz battery for crushing quartz. A 73. 552
- 600 Mitchell, J. H., Philadelphia, Pa.—Steam engines. B 80. 552
- 600a Hampson, Whitehill & Co., New York, N. Y.—Stationary engine. B 73. 552
- 601 New York Safety Steam Power Co., New York, N. Y.—Launch engines, stationary engine, combined engine and boiler. E 38-40. 552
- 602 Lynde, J. D., Philadelphia, Pa.—Duplex engine. B 71, and *Boiler house 4.* 552
- 603 Naylor, Jacob, Philadelphia, Pa.—Engines, horizontal and vertical boiler feed pump, and combined feed pump and heater. D 71-73. 552
- 604 Roberts, E. A. L., Titusville, Pa.—Exhaust engine; exhaust crank. C 78. 552
- 605 Ervien, Charles W., & Bro., Philadelphia, Pa.—Steam engines. B 69, and *Pump annex.* 552
- 606 McCutchen, John F., Philadelphia, Pa.—Block for eccentric hooks of steam engine. B 77. 552
- 607 Meeker, D. M., & Sons, Newark, N. J.—Part of cylinder of the first steam engine used in America. B 76. 552
- 608 Griffith & Wedge, Zanesville, O.—Vertical portable engine, and centrifugal drying machine. C 74 and D 77. 552
- 609 Klein, Chas. C., Philadelphia, Pa.—Eccentric piston engine. C 79. 552
- 610 Jeffery, Thos. B., Chicago, Ill.—Rotary steam engines. B 77. 552
- 611 Hartford Foundry & Machine Co., Hartford, Conn.—Automatic and variable cut-off non-condensing steam engine. These engines, formerly known as the "Woodruff & Beach" iron works engine, have acquired a very wide reputation on account of their excellent performances. They are a type of steam motor, combining the prime essentials of solidity, durability, and great economy. There are now in daily use over three hundred, practically demonstrating their merits. (*Annex I.*) 552
- 612 Twiss, Nelson W., New Haven, Conn.—Vertical engine, yacht engine. C 79. 552
- 613 Blandy, H. & F., Zanesville, O.—Portable, agricultural, and saw-mill engines, and stationary engine. B 68. 552
- 613a Lewistown Brass & Engine Co., Lewistown, Pa.—Upright and horizontal engines. C 74. 552

## Engines and Appliances, Belting, Shafting, etc.

- 613<sup>b</sup> Allis, Edward P. & Co., Milwaukee, Wis.**—Steam engine. (*Saw mill.* A 10-11.) 552
- 614 Erie City Iron Works, Erie, Pa.**—Stationary engine, horizontal engine. C 76. 552
- 615 Otis Bros. & Co., 348 Broadway, New York, N. Y.**—Furnace engine for hoisting purposes. The blast furnace hoisting engine, is adapted for operating two platforms; store hoisting engines, small size, lifting power and gear combinations, lifting power with screw combinations, for use in factories, mills, etc., and safety platforms for freight purposes, with corner and side upright; tiercing truck for piling up heavy boxes or packages. B 38. 552
- 616 Bastet Magnetic Engine Co., Philadelphia, Pa.**—Magnetic engines for sewing machines, organs, lathes, pumps, etc. B 75. 552
- 617 Wells Balance Engine Co., New York, N. Y.**—Double piston engine. C 77. 552
- 618 Niagara Steam Pump Works, Brooklyn, N. Y.**—Miniature engine. Direct acting piston, pressure, and fire pump, direct acting plunger mining pump, crank pump and engine; direct acting organ engine; direct acting agitator and oil pump; direct acting plunger, on boilers in saw mill, loaned Centennial Commission. (*Pump annex.*) 552
- 619 Brown, C. H., & Co., Fitchburg, Mass.**—Automatic regulating cut-off steam engine. (*Saw mill.*) 552
- 620 Howard, George C., 13 $\frac{1}{2}$  South Eighteenth street, Philadelphia, Pa.**—Patent belt gearing for operating machines of variable speed, sewing machines, etc. B 31. 553
- 621<sup>a</sup> Powers, W. P., La Crosse, Wis.**—Belting. A and B, *Saw mill.* 553
- 621<sup>b</sup> Stow & Burnham, 500 North Fifteenth street, Philadelphia, Pa.**—Flexible cable for transmitting power in any direction, also tools and machines operated therewith; drills workable wherever ratchet drill is used; flue cutter for removing locomotive flues. D 68. 553
- 621<sup>c</sup> Wahl, Albert, Philadelphia, Pa.**—Health apparatus; back straightener and chest expander. E 75. 553
- 622 Eckfeldt & Richie, Philadelphia, Pa.**—Oak-tanned leather butts, belting and fire hose. D 65. 553
- 623 Page Belting Co., Concord, N. H.**—Leather belting and lace leather; driving belt (in use). D 64. 553
- 624 Roebling's Sons, John A., & Co., Trenton, N. J.**—Wire rope, rigging, rope fastenings, bridge cables, rods, telegraph wire, etc. C 64. 553
- 625 Alexander Bros., 410 & 412 North Third street, Philadelphia, Pa.**—Oak-tanned leather belting, and frame of specimen laps; also patent double belt-driving shaft No. 3, the construction of which greatly increases the effectiveness and durability of belts from 16 to 48 inches, or wider. Descriptive circulars furnished. D 64. 553
- 626 Crasson, Geo. V., Philadelphia, Pa.**—Pulleys, hangers, couplings, wall boxes, pillow blocks, etc. C 71-73. 553
- 627 Helm, Anton, New York, N. Y.**—Leather belting, hydraulic packing leather, tympan skins, lace leather, picker leather, elastic pulley; driving belt (in use). D 65. 553
- 628 Branch, Crookes, & Co., St. Louis, Mo.**—Adjustable countershaft hanger and belt tightener, for intermediate motion without loose pulleys. (*Saw mill.*) 553
- 629 Rorer, Thomas I., Philadelphia, Pa.**—Combined leather and canvas belting. D 65. 553
- 630 American Tubular Iron & Steel Association, Philadelphia, Pa.**—Tubular iron and steel car axles, shafting, columns, bars. C 70-73. 553
- 631 Pennsylvania Combined Iron & Steel Association, Philadelphia, Pa.**—Combined iron and steel rails, beams, girders, shafting plates, horse shoe and merchant bars. C 70-73. 553
- 632 Jones & Laughlins, American Iron Works, Pittsburg, Pa.**—Bar, sheet, and plate iron, T-rails, shafting, hangers, pulleys, couplings. Manufacturers of bar, hoop, sheet, and plate iron; patent cold-rolled shafting; hangers, pulleys, couplings, T-rails, street rails, nails, and spikes. C 65 and 70. 553
- 633 Schieren, Charles A., New York, N. Y.**—Oak-tanned leather belting; double belt (in use). D 64. 553
- 634 Charlton, John, Philadelphia, Pa.**—Internal clamp coupling for shafting, main driving pulley, with internal clamp hub. C 71 and 73. 553
- 635 Hoyt, J. B., & Co., New York, N. Y.**—Oak-tanned sole leather and belting. D 66. 553
- 636 Royer, H., San Francisco, Cal.**—Fulled rawhide, belting, lacing, rope. D 66. 553
- 637 Chatfield, Underwood, & Co., New York, N. Y.**—Angular belting. D 65. 553
- 638 Pusey, Jones, & Co., Wilmington, Del.** C 74. 553  
<sup>a</sup> Expanding pulleys. 553  
<sup>b</sup> Temper cut-offs and governors for steam engines. 555
- 639 Jewell, P., & Sons, Hartford, Conn.**—Leather belting, metallic-tipped belt lacings. D 67. 553
- 640 Mason, Volney W., & Co., Providence, R. I.**—Friction clutches and pulleys, adjustable hangers; also, friction clutch pulleys, driving main lines of shafting in pump annex, and in Machinery Hall adjoining, near Corliss engine. D 66 and *Pump annex.* 553
- 641 Poole & Hunt, Baltimore, Md.**—Shafting and appurtenances. C 79. 553
- 641<sup>a</sup> Eccles, James, Philadelphia, Pa.**—Shaft coupling. D 60. 553
- 642 Gates, Josiah, & Sons, Lowell, Mass.**—Leather belting, hose, lacing, and worsted apron leather and fire supplies. C 78. 553
- 643 Burgess & Son, Providence, R. I.**—Leather belting, lace leather, picker leather, loom pickers. C 70. 553
- 644 Cook, A. B., & Co., Erie, Pa.**—Adjustable dead pulleys, wooden belt pulleys, and taper sleeve pulleys. D 72. 553

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

# HARRISON Boiler Works,

2550 Gray's Ferry Road, Phila.

(TAKE FINE ST. CARS.)

The following Medals have been awarded to this boiler:

By the World's Fair, London, First-class Bronze, 1862.

American Institute Fair, N. Y. " 1869.

Great Gold and Silver Bazaar Medals, 1871.

Franklin Institute Exhibition, First-class Silver, 1874.

Descriptive Pamphlets, Drawings, &c. furnished upon application to the Works.

These Boilers may be seen in operation in Boiler-house No. 4 of Machinery Hall.



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# **BALDWIN LOCOMOTIVE WORKS,** BURNHAM, PARRY, WILLIAMS & CO., PHILADELPHIA.

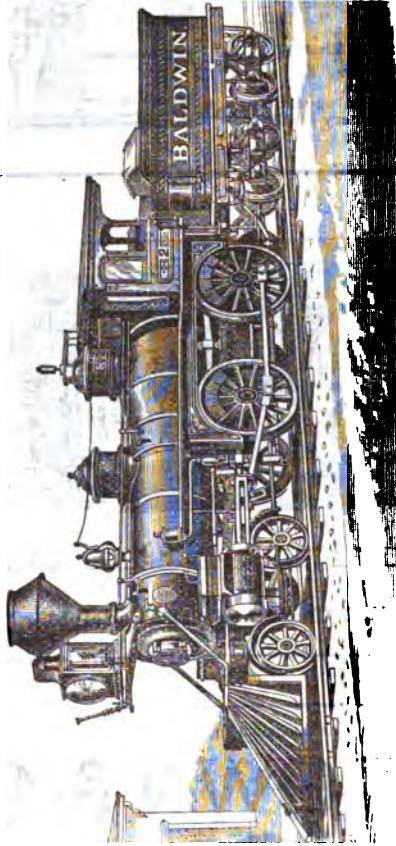
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**Narrow Gauge Locomotives, Mine Locomotives, Steam Street Cars,**

**ETC., ETC.**

**Works on Broad St., from Pennsylvania Ave. to Spring Garden St.**



## Motors and Appliances.

- 645 Fowler, F. G., Bridgeport, Conn.—Propeller. B 72. 554
- 645a Neafie & Levy, Philadelphia, Pa.—Propeller wheels and blade. C 77. 554
- 645b Lane Bros., Millbrook, N. Y.—Motor for driving light machinery. C 77. 554
- 645c Rhett, Roland, Baltimore, Md.—Spring motor for sewing machines. C 71. 554
- 645d Harper, William, jr., Philadelphia, Pa.—Screw propeller. C 76. 554
- 646 Brown, Edward, Philadelphia, Pa.—Pyrometers for blast furnaces, bakers' ovens, tempering steel, etc.; revolution indicators. D 68. 555
- 647 Woodruff, Joseph, Rahway, N. J.—Balanced steam damper regulator. D 76. 555
- 648 Wickersham & Bro., Philadelphia, Pa.—Oil feeder, brass and glass oil cups. D 76. 555
- 649 Pancoast & Maule, Philadelphia, Pa.—Steam and hot water house heating apparatus, vertical tube radiators, pipe cutter. D 75. 550
- 650 New York Belting & Packing Co., New York, N. Y.—Rubber belting, packing, hose, tubing, car springs, vulcanite emery wheels, etc. D 75. 555
- 650a Ashcroft, E. H., Boston, Mass.—Steam and vacuum gauges; safety valves; oil testing machine. D 72-73. 555
- 650b Allis, E. P., & Co., Milwaukee, Wis.—Boiler feed regulator. (*On boiler in Campbell Press Building.*) 555
- 650c Katzenstein, L., & Co., New York, N. Y.—Metallic packing for piston rods and valve stems. E 40. 555
- 650d Potter & Hoffman, Philadelphia, Pa.—Steam packing. B 30. 555
- 651 Parshall, C. H., Detroit, Mich.—Lubricator. D 71. 555
- 652 Belfield, H., & Co., Philadelphia, Pa.—Brass and iron valves, cocks, steam gauges, whistles, gongs, steam heating apparatus, etc. D 74. 555
- 652a Rue Manufacturing Co., Philadelphia, Pa.—Boiler feeders; injectors. (*Boiler house 4, and Pump annex, Sec. 4, Col. 13.*) 555
- 653 Allen's Sons, Josiah J., Philadelphia, Pa.—Anti-lamina, for preventing and removing scale from boilers. D 76. 555
- 654 Stilwell & Bierce Manufacturing Co., Dayton, O.—Lime extracting heater and filter combined. Removes all impurities from feed-water for steam boilers; indispensable to an economical use of steam. D 80. 555
- 655 Richards, Jackson, Philadelphia, Pa.—Piston packing. D 69. 555
- 656 Waters, C., & Co., Boston, Mass.—Steam engine governors. D 74. 555
- 657 Buffalo Steam Gauge & Lantern Co., Buffalo, N. Y.—D 72. 555
- a Steam gauges. 555
- b Locomotive head light with patent burner, hand lantern. 576
- 658 Lehman, B. E., Bethlehem, Pa.—Gauge cocks, water gauges, oil cups, gate valves. D 70. 555
- 659 American Oil Cabinet Co., Boston, Mass.—Safety oil cabinets. D 72. 555
- 660a Vulcanized Fibre Co., Wilmington, Del.—Fish-bolt and carriage washers. D 65. 555
- 660b Brown, Aug. P., New York, N. Y.—Boiler fixture and engine governor. D 70. 555
- 660c McShane, Henry, & Co., Baltimore, Md.—Bells. (*Northeast tower.*) 555
- 660d Christoffel, T. B., Williamsburg, N. Y.—Tube cleaners and scrapers. D 66. 555
- 661 Utica Steam Gauge Co., Utica, N. Y.—Gauges, marine clocks, revolution counters, gauge testing apparatus. D 73. 555
- 662 Cleveland Steam Gauge Co., Cleveland, O.—Gauges, spring balances, test pump and gauge. D 72. 555
- 663 Aultman, Miller, & Co., Akron, O.—Self-registering dynamometer. D 68. 555
- 664 Davis & DuBois, Philadelphia, Pa.—Tallow cups for engines, etc. D 68. 555
- 665 Lynde, J. D., Philadelphia, Pa.—Governors, valves, feed water heaters, regulators and low water alarm combined. B 71, and Boiler house 4. 555
- 666 Union Water Meter Co., Worcester, Mass.—Water meters, steam gongs, governor valves, steam and water regulators. D 67. 555
- 667 Kline, Aaron K., Somerville, N. J.—Governor for steam engines. D 69. 556
- 667a Burnet, William, Washington, D. C.—Lubricator. *Pump annex 8 and 9.* 555
- 667b Hetzel, Herman V., Philadelphia, Pa.—Speed indicator. B 73. 555
- 667c Chard & Howe, New York, N. Y.—Lubricating compound and cup. A 47. 555
- 667d Canfield Manufacturing Co., Philadelphia, Pa.—Steam and hydraulic stuffing-box packing, self-lubricating hempen fibre, gum core. D 68. 555
- 668 Haurey, Henry F., Newark, N. J.—Flue and tube brushes. D 69. 555
- 669 Jenkins, Wm. H., & Co., Philadelphia, Pa.—Boiler feeder, steam trap, damper regulator, low water alarm, safety valve, steam gauges. D 77. 555
- 670 Bibb, B. C., & Son, Baltimore, Md.—Fireplace heater. D 72. 555
- 671 Post & Co., Cincinnati, O.—Steam gauges. D 71. 555
- 672 Greenwich Machine Works, Greenwich, N. Y.—Hornshoe corking vise and bolt heading machine. A 37. 555
- 673 Tracy, Elias, Philadelphia, Pa.—Injector for boilers. D 68. 555
- 674 Clark, Rufus F., Philadelphia, Pa.—Cylinder oiler. E 69. 555
- 675 Lathrop Anti-friction Co., New York, N. Y.—Carbon composition machinery lubricator. D 68. 555
- 676 Asbestos Patent Fibre Co. (limited), Philadelphia, Pa.—Utilized fibre, paper, board; steam joints and packing, non-conducting pipe covering. D 69. 555

## Motors and Appliances, Pumps.

- 677 Davis, J. B., Hartford, Conn.—Feed water heater and purifier. D 68. 555
- 678 Jasper, George F., Freeburg, Ill.—Heater and filter. D 78. 555
- 679 Brown, Fergus, & Co., Philadelphia, Pa.—Injector for steam boilers. (*In use in building.*) 555
- 680 Brown & Fergus, Philadelphia, Pa.—Steam injector for steam boilers. (*In building.*) D 68. 555
- 680a Metallic Art Works, Boston, Mass.—Plates and castings of bronze. C 71. 555
- 680b Jamison, Samuel S., Saltsburg, Pa.—Steam water-injector, car replacer, chimney top. B 64. 555
- 681 Le Van, W. Barnet, Philadelphia, Pa.—Steam engine governors, damper regulator, and furnace grate bars. D 70. 555
- 682 Willoughby, James D., Philadelphia, Pa.—Governor cut-off for steam engines. D 68 and 51, and *Pump annex.* 555
- 683 Woodruff, A. H., Lansing, Iowa.—Reverse and expansion gear for locomotives and propeller engines. D 69. 555
- 685 Newell, Wm. H., Philadelphia, Pa.—Injector valves. (*In building.*) 555
- 686 Allen, Stillman B., Boston, Mass.—Governor for steam engines. D 72. 555
- 686a Pickering, T. R., Portland, Conn.—Steam engine governors. C 74. 555
- 687 Osgood, Josiah A., Boston, Mass.—Crank pin oiler, metallic spring packing, etc. D 69. 555
- 688 McNab & Harlin Manufacturing Co., New York, N. Y.—Valves, cocks, whistles, water gauges, iron fittings, plumbers' materials. B 40. 555
- 689 Edson's Steam Recording Gauge Manufacturing Co., 91 Liberty street, New York, N. Y.—Gauges, electrical alarms, revolution counters. Sole makers of "Edson's Patent Recording Gauges" for steam or water, with or without the "time" attachment, or the "electrical alarm"; also "revolution counters," and "30-inch gauges." Reliable as "standards of pressure." Send for circulars. D 67. 555
- 690 Schutte & Goehring, Philadelphia, Pa.—Steam jet machinery, furnace blowers, ventilators, injectors, syphons, gas exhausters, condensers, etc. (*Pump annex.*) 555
- 690a Leonard, T. M., New York, N. Y.—Oil cup and dynamometer. B 52. 555
- 690b Miller, W. P., New York, N. Y.—Lubricant. D 52. 555
- 690c Pratt & Whitney Co., Hartford, Conn.—Automatic boiler-feeder and return steam trap. (*In use in Boiler houses.*) 555
- 690d Smith, Levi F., Philadelphia, Pa.—Low water indicators, lubricators, gauge, steam trap, blower, comb-wrench, car seat, etc. D 78. 555
- 691 Lonergan & McBride, Philadelphia, Pa.—Oil cups and lubricators. D 66. 555
- 692 Silver Lake Co., Boston, Mass.—Self-lubricating steam packing. D 68. 555
- Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.**
- 693 Dart, Edward & Co., New York, N. Y.—Rotary pumps and engines, marine governors, cotton gins, presses, duplex plunger crank steam pump. (*Pump annex.*) 560
- 694 Cooper, Jones, & Cadbury, Philadelphia, Pa.—Pumps. B 19. 560
- 695 Silsby Manufacturing Co., Seneca Falls, N. Y.—Rotary steam pump. This firm also has two rotary steam fire engines and a hose cart on the Exhibition grounds, in charge of the Centennial fire brigade. Illustrated and descriptive circulars—English, Spanish, French, and German—may be had on application. A 4. 560
- 696 Valley Machine Co., Easthampton, Mass.—Bucket-plunger steam pumps. (*Pump annex.*) 560
- 697 Kelly, Wm. E., New Brunswick, N. J.—Steam pumps. (*Pump annex and Boiler house 3.*) 560
- 698 Aquometer Steam Pump Co., Philadelphia, Pa.—Steam pumps. (*Pump annex.*) 560
- 699 Hubbard & Aller, Brooklyn, N. Y.—Steam pumps. (*Pump annex.*) 560
- 700 Union Manufacturing Co., New Britain, Conn.—Iron and brass cistern; force, yard, drive well; garden engines, boiler, pumps, and rams. (*Pump annex.*) 560
- 700a Purvis, Edward, New York, N. Y.—Automatic steam valve. (*Pump annex 8-11.*) 560
- 700b Nichols, Harris & Walker, New London, Conn.—Acid pump and syphon. (*Pump annex 2-12.*) 560
- 700c Craig & Brevoort, New York, N. Y.—Condenser for steam pumps, steam engines, etc. (*Pump annex 2-12.*) 560
- 700d Hyneman, Isaac, Philadelphia, Pa.—Odorless excavating pump. (*Pump annex 1-5.*) 560
- 700e Le Page, W. N., Boston, Mass.—Force pumps. (*Pump annex 2-12.*) 560
- 700f Wood, Joseph, Red Bank, N. J.—Steam pump. E 69. 560
- 700g Hubbard, S. D., Pittsburg, Pa.—Steam pump. (*Boiler house 3.*) 560
- 700h Young, William, Easton, Pa.—Young's patent wrought iron, rubber-coated, brass cylinder lift and force pumps for deep wells and cisterns. Being made principally of wrought iron, are strong, light and durable. The cylinder and all the working parts are made of brass, works smooth, very durable, and will not rust the water as iron would. (*Pump annex 7-5.*) 560
- 701 Wiswall, H. M., Boston, Mass.—Rotary and oscillating pumps. (*Pump annex.*) 560
- 702 Norwalk Iron Works Co., South Norwalk, Conn.—Direct acting non-expansive steam pumps. C 76. 560

or location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

## Pumps, Compressed-Air Engines.

- 703 La France Manufacturing Co., Elmira, N. Y.**—P 11, and *Pump annex.*  
*a* Rotary pumps and engine. 560  
*b* Rotary steam fire engine. 564
- 704 Rumsey & Co. (limited), Seneca Falls, N. Y.**—Pumps, hydraulic rams. B 45, and *Pump annex.* 560
- 705 Carr, Adam, New York, N. Y.**—Direct action steam pumps; compound direct action pump; will save sixty per cent. in fuel and boilers; positive circulating steam radiators; noiseless friction hoisting engine; condensers for steam engines and pumps. (*Pump annex and Boiler house 4.*) 560
- 706 Douglas, W., & B., Middletown, Conn.**—Pumps, hydraulic rams, pump chain, garden engines, curbs, chain pump fixtures; grindstone frame. (*Pump annex.*) 560
- 707 Vail & Wallace, Keokuk, Iowa.**—Water elevator. (*Pump annex.*) 560
- 708 Mitchell, J. H., Philadelphia, Pa.**—Deck pump for ship use. B 80. 560
- 709 Hooker, Wm. D., Dedham, Mass.**—Direct acting steam pumps. (*Pump annex.*) 560
- 710 Chapman, Henry, Philadelphia, Pa.**—Centrifugal hydro-extractor, for brewers' grains, etc. Kiln model. (*Pump annex 13.*) 560
- 710a Waring, J. B., Stamford, Conn.**—Steam pump. (*Pump annex 12.*) 560
- 710b Toledo Pump Co., Toledo, O.**—Wood pumps. (*Pump annex 5.*) 560
- 710c Hathorn, Davis, Campbell, & Davey, New York, N. Y.**—Pump engine. C 3 and 4, and *Pump annex 27.* 560
- 710d Heold, Sisco & Co., Baldwinsville, N. Y.**—Steam centrifugal pump and centrifugal pumps driven by belts. (*Pump annex.*) 560
- 711 Follensbee, Geo. S., Lewistown, Me.**—Double propeller pump. (*Pump annex.*) 560
- 712 Grosvenor, J. A., Jersey City, N. J.**—Pulsometer steam pump, operated by pressure of steam on surface of water. (*Pump annex.*) 560
- 713 Biggs, B. F., & Wells, La Fayette, Ind.**—Wooden lifting and suction pump. (*Pump annex.*) 560
- 713a Ferrell & Jones, Philadelphia, Pa.**—Combined steam pump and engine; centrifugal pump and yoke steam pump. (*Pump annex 8.*) 560
- 713b Matthewman & Johnson Pump Co., New Haven, Conn.**—Excavating pump with deodorizing apparatus. (*Pump annex 12.*) 560
- 713c Blake, George F., Manufacturing Co., Boston, Mass.**—Steam pump. (*Pump annex 8-g.*) 560
- 713d Eagle Odorless Excavating Co., Philadelphia, Pa.**—Odorless excavator. (*Pump annex.*) 560
- 713e Roberts, E. A. L., Titusville, Pa.**—Sand pump. C 78. 560
- 713f Crane Bros. Manufacturing Co., Chicago, Ill.** (*Pump annex 7.*)  
*a* Steam elevators and pumps. 560  
*b* Hoisting engines and steam radiators. 563
- 714 King, Charles W., Boston, Mass.**—Force pumps and house pumps with removable cylinders. (*Pump annex.*) 560
- 715 White, Clark, & Co., Baldwinsville, N. Y.**—Centrifugal pump. (*Pump annex.*) 560
- 716 Poole & Hunt, Baltimore, Md.**—Feed water heater and pump. C 79. 560
- 717 Willoughby, James D., Philadelphia, Pa.**—Pulseless pulsometer. D 51 and 68, and *Pump annex.* 560
- 718 Bradley, J., & Co., Philadelphia, Pa.**—Odorless excavating apparatus. (*Pump annex.*) 560
- 719 Gawthrop, A., & Son, Wilmington, Del.**—Glass models of hydraulic rams with regulators, in operation. (*Pump annex.*) 560
- 720 Huffer, Abraham, Hagerstown, Md.**—Automatic steam vacuum pump. (*Pump annex.*) 560
- 721 Pease, F. S., Buffalo, N. Y.**—Pneumatic pump. (*Pump annex.*) 560
- 722 Bagley & Sewall, Watertown, N. Y.**—Rotary metal force pump with self-packing joints, without stuffing-boxes or valves; pressure on working parts equalized; absolutely positive in action; volume of liquid discharged proportionate to power and speed applied. Specially adapted to use of paper makers, brewers, tanners, etc., and for fire protection. (*Pump annex.*) 560
- 724 Niagara Steam Pump Works, Brooklyn, N. Y.**—Direct acting steam pump and crank pump. (*Pump annex.*) 560
- 725 Hydrostatic & Hydraulic Co., Philadelphia, Pa.**—Shaw's compound propeller pumps for quarries, mines, etc. Propeller wheels secured to rotating shaft lifts from one thousand to one hundred thousand gallons per minute any height; has no valves, and is not liable to obstruction. Office, at Shaw's Engineering Depot, 915 Ridge avenue, Philadelphia, Pa. (*Pump annex.*) 560
- 726 Conde & Co., Philadelphia, Pa.**—Steam pumping engine. (*Pump annex.*) 560
- 727 Nye, Gourlay, & Co., Chicago, Ill.**—Steam vacuum pump. (*Pump annex.*) 560
- 730 Sluthour & Mintzer, Philadelphia, Pa.**—(*Pump annex.*)  
*a* Force and bilge hand pumps. 560  
*b* Fire engines. 564
- 731 Albright & Stroh, Mauch Chunk, Pa.**—B 19.  
*a* Model of duplex steam pump. 560  
*b* Fire-plugs. 566
- 732 Allison & Bannan, Port Carbon, Pa.**—Improved air compressing engines. Correspondence and orders solicited. A 52. 561
- 732a Burleigh Rock Drill Co., Fitchburg, Mass.**—Rock drilling machines, drill carriages, air compressor, tunnelling and mining machines. A 51. 561
- 732b Taws & Hartman, Philadelphia, Pa.**—Fittings for, and drawings of, blasting furnaces. B 20-21. 561
- 732c Union Rock Drill Co., New York, N. Y.**—A 60.  
*a* Air compressor. 561  
*b* Hose couplings for rock drills. 564
- 733 Coffin & Woodward, Boston, Mass.**—Main and bilge pump for vessels, force pump. D 39. 562

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## Hydraulic and Pneumatic Machines, Elevators.

- 734 Roets, P. H. & F. M., Connersville, Ind.**—Rotary pressure blowers, hand blowers, gas exhauster. Patentees and manufacturers of positive blast rotary blowers, and gas exhausters, adapted to all purposes for which blast or exhaust are required; also of improved Bye passes and gas valves. (*Pump annex.*) 562
- 734a Patterson, C. R., Pittston, Pa.**—Suction and blast fan. B 61. 562
- 734b Gould's Manufacturing Co., Seneca Falls, N. Y., New York office 15 Park Place.**—Iron and brass force and lift pumps, rotary pumps, ship, railroad, mine, and quarry pumps, hydraulic rams, garden and fire engines. A very elaborate exhibit. (*Pump annex 8 and 10.*) 564
- 735 Ferris & Miles, Philadelphia, Pa.**—Blowing engine, steam hammer, and steam drop. (*Annex 1.*) 562
- 736 Wilbraham, T., & Bros., Philadelphia, Pa.**—Pressure blowers and steam engines, gas exhausters and steam engines. (*Pump annex.*) 562
- 737 Morris Co., I. P., Philadelphia, Pa.**—Blowing engine—ten thousand seven hundred and forty cubic feet of air per minute. B 48. 562
- 738 Roddey, P. D., & Co., New York, N. Y.**—Ship ventilator, fog alarm, bilge pump. (*Pump annex.*) 562
- 740 Murphy, Francis, Streator, Ill.**—Ventilating apparatus for mines, tunnels, steamboats, etc. (*Pump annex.*) 562
- 741 Disston, Thomas S., Philadelphia, Pa.**—Rotary pressure blower. (*Pump annex.*) 562
- 742 Sturtevant, B. F., Boston, Mass.**—Pressure and fan blower. *Pump annex 10-9.* 562
- 743 Chase, F. D., Boston, Mass.**—Patent ventilating ship deck irons, in brass composition and galvanized iron; intended for vessel decks, steam car roofs, etc. Seven sizes; flues, from four to nine inches in diameter. Patented, June 23, 1863, improved 1875. (*Pump annex.*) 562
- 744 Wemner, P. L., Lebanon, Pa.**—Blowing engine. B 69. 562
- 745 Exeter Machine Works, Boston, Mass.**—Pressure blowers, fan blowers, and exhaust fans. (*Pump annex.*) 562
- 745a Boston Piston Meter Co., Boston, Mass.**—Fluid meter. (*Pump annex 2-3.*) 563
- 746 Howard, George C., 13½ South Eighteenth street, Philadelphia, Pa.**—Hoisting machine; screw gear runs in a bath of oil; patent stop brake, belt shifter, pulleys self-oiling, on independent bearings, car for any location. Elevators made with double and single engines. B 31. 563
- 747 Gunpowder Pile Driver Co., Philadelphia, Pa.**—Pile driver. (*Outside of building.*) 563
- 748 Ruoff, William, Philadelphia, Pa.**—Double and single-gear jack screws, for moving and raising stone and all heavy weights. (*Pump annex.*) 563
- 749 Stewart, Ralph & Co., Philadelphia, Pa.**—Packing machines. D 23. 563
- 750 Eccles, James, Philadelphia, Pa.**—Quadruple screw-power press, pivot centre for drawbridge, etc. D 60. 563
- 751 Sternberger, Leopold, Philadelphia, Pa.**—Safety screw steam platform elevator. Patent right for sale. Address Jas. W. Rowley, 1511 North Twentieth street, Philadelphia. E 76. 563
- 751a Pennypacker, Matthias, Philadelphia, Pa.**—Hand hoisting machine. (*Pump annex 1.*) 563
- 752 Harrison, W. H., Philadelphia, Pa.**—Double-acting two-valve pump and hydraulic elevator. (*Pump annex.*) 563
- 753 Pneumatic Despatch Co., New York, N. Y.**—Pneumatic tube. (*Outside of building.*) 563
- 754 Bolen, Crane, & Co., Newark, N. J.**—Compound hydraulic press. (*Pump annex.*) 563
- 755 Eagle Meter Co., New York, N. Y.**—Water meter. (*Pump annex.*) 563
- 756 Archbold, Samuel, 417 Walnut street, Philadelphia, Pa.**—Marland's liquid meter, for measuring water and other fluids. Of the turbine wheel form; has only one moving part, besides the register; is not at all affected by sand or silt passing through it; no friction, no wear—hence great durability; readily understood and easily operated. Manufactured by the American Meter Co., Philadelphia. (*Pump annex.*) 563
- 757 Dudgeon, Richard, New York, N. Y.**—Hydraulic jacks, pullers, and expanders. C 27. 563
- 758 Taylor, John F., Charleston, S. C.**—Sicam and hydraulic cotton press. C 54-56. 563
- 759 National Meter Co., New York, N. Y.**—Water meters. C 27. 563
- 759a Bailly & Co., Foxcroft, Me.**—Elevator for raising rocks, etc. (*Adjoining Annex 3.*) 563
- 759b United States Hoisting & Conveying Co., New York, N. Y.**—Automatic machinery for hoisting, conveying, and depositing. (*Outside of Machinery Hall.*) 563
- 759c Higgins, H. Van, Chicago, Ill.**—Water meter; oscillating piston meter. (*Pump annex 1.*) 663
- 759d Carlile & Elliott, Steubenville, O.**—Safety lock for elevators. (*Pump annex 1.*) 563
- 760 Guerin, Thomas, San Francisco, Cal.**—Instrument for measuring and regulating the flow of water from reservoir or canal. (*Pump annex 1-2.*) 563
- 761 Mason, Volney W., & Co., Providence, R. I.**—Elevator hoisting machine and safety platform. Also, friction clutch pulleys, driving main line of shafting in pump annex and in Machinery Hall adjoining, near Corliss engine. D 66, and *Pump annex.* 563
- 762 Williams, S. S., & Co., Philadelphia, Pa.**—Hod elevator. (*Pump annex.*) 563
- 763 Goldmark, Joseph, New York, N. Y.**—Safety elevators for hotels, dwellings, and warehouses, operated by steam, water, or hand power. These elevators are absolutely safe, by virtue of the mechanical principles underlying their construction; they, therefore, require no safety appliances whatsoever, beyond a common break. They are run in private resi-

## Hydraulic Machines, Fire Engines and Appliances.

- deces by water pressure, at an expense of less than half a cent for a round trip, and are used by women and children without requiring a special attendant. A 40. 563
- 763a Remington, E., & Sons, Ilion, N. Y.—Water meter. (*Pump annex 1.*) 563
- 764 Robertson, John, & Co., Brooklyn, N. Y.—Hydraulic pumps, hydraulic presses. (*Pump annex.*) 563
- 765 Ross, Thos., Rutland, Vt.—Steam crane. (*Annex 2.*) 563
- 766 Randall, Francis M., New York, N. Y.—Automatic steam and vacuum pump. (*Pump annex.*) 563
- 766a Maclay, J. W., New York, N. Y.—Water meter. (*Pump annex 1.*) 563
- 766b Ritter, J. R., Reading, Pa.—Model of hoisting apparatus. (*Pump annex 5.*) 563
- 767 Jones & Holmes, Providence, R. I.—Water elevators for open wells. (*Outside of building.*) 563
- 768 Bates, James, Baltimore, Md.—Hand elevator. (*Pump annex.*) 563
- 769 Yale Lock Manufacturing Co., Stamford, Conn.—Safety hoisting machinery, friction clutches and brakes, differential pulleys, drilling braces; stud end cutter. C 78. (*Outside.*) 563
- 770 Foulds, Thomas, Jr., Trevorton, Pa.—Water elevator. (*Pump annex.*) 563
- 773 Otis Bros. & Co., 348 Broadway, New York, N. Y.—Passenger elevator, including engine, safety drum, etc. Manufacturers of brewery elevators, which are generally in use and with great satisfaction in many of the large breweries throughout the country. Their specialty in this line is the elevators, including independent hoisting engine, safety platform, with galvanized iron work, to prevent rust, with lifting ropes and safety ratchets, etc. R 38. 563
- 774 Leonard & Silliman, Bridgeport, Conn.—Grain elevator. E 56. 563
- 774a Sweetland, I. B., Pontiac, Mich.—A brick and mortar elevator. (*Annex 3.*) 563
- b Self-packing faucet, rubber packing. (*Annex 3.*) 566
- 775 Desper, W. E., & Co., Worcester, Mass.—Water meters. (*Pump annex.*) 563
- 776 Tatham & Bros., New York, N. Y.—B 21. 563
- a Safety apparatus for hoisting machines. 563
- b Drop and buck shot, lead and tin-lined lead pipe, tin-lined iron pipe, sheet lead. 566
- 777 Silsby Manufacturing Co., Seneca Falls, N. Y.—Rotary steam fire engines, horse hose carriage and hand hose reel. Also, in charge of the Centennial Fire Brigade, two rotary steam fire engines and horse hose cart. Illustrated and descriptive circulars, English, Spanish, French, and German, may be had on application. A 6. 564
- 778 Street, E. A., New York, N. Y.—Portable fire pump. B 45. 564
- 778a Holloway, Charles T., Baltimore, Md.—Chemical self-acting fire engine; portable fire extinguisher. A 40. 564
- 778b Birkinbine, H. P. M., Philadelphia, Pa.—Apparatus for operating hydraulic valves at a distance. B 46. 564
- 778c Fairbrother, H. L., & Co., Pawtucket, R. I.—Leather belting. D 9, 72. 564
- 778d Babson & Dwight, New York, N. Y.—Self-regulating fire-escapes. (*West end of Machinery Hall, opposite column 82.*) 564
- 778e Heywood, C. L., & Co., Boston, Mass.—Iron safety folding fire-escape ladder. B 68. 564
- 779 Straw, E. A., Manchester, N. H.—Steam fire engine. (*In use on grounds.*) 564
- 780 Schanz, C., Philadelphia, Pa.—Hook and ladder truck for firemen. B 54-56. 564
- 780a Falk, Louis, New York, N. Y.—Portable fire escape. A 5. 564
- 780b Wilson, W. H., New York, N. Y.—Firemen's hats and helmets. B 62. 564
- 781 Champton Fire Extinguishing Co., Louisville, Ky.—Chemical engines, with hook, ladder, and hose attachments, hand fire extinguishers. B 56. 564
- 782 Babcock Manufacturing Co., New York, N. Y.—Chemical engines, hook and ladder trucks, truck and engine combined, fire extinguishers. B 57-60. 564
- 783 Platt, Wm. K., & Co., Philadelphia, Pa.—Fire extinguishers. B 49. 564
- 784 Vose, Wm. T., Boston, Mass.—Hydropult, for extinguishing fires, washing and watering purposes. A 4. 564
- 784a Eureka Fire Hose Co., New York, N. Y.—Seamless cotton and linen fire hose. E 68. 564
- 784b Gutta-Percha & Rubber Manufacturing Co., New York, N. Y.—Rubber belting, hose, and packing. B 44. 564
- 785 Spawn, A. F., & Co., New York, N. Y.—Chemical fire engines, hose carriage, hook and ladder truck, firemen's supplies. B 64-66. 564
- 787 Nichols, B. S., & Co., Burlington, Vt.—Steam fire engine. (*Pump annex.*) 564
- 788 Gomersall, Alfred, Philadelphia, Pa.—Engines, pumps, model of hose carriage. C 79. 564
- 789 Greer, Samuel Y., Philadelphia, Pa.—Hand hose carriage, leather fire hose, leather fire buckets. B 50. 564
- 791 Rumsay & Co. (limited), Seneca Falls, N. Y.—Hand fire engine. B 45. 564
- 794 Dennison, J. N., Newark, N. J.—Steam fire engine, portable waterworks. B 48. 564
- 795 Lamm, John, Fort Deposit, Md.—Fire extinguisher. Permanent for dwellings, factories, etc.; useful to gardeners. Rights for sale by patentee. B 66. 564
- 796 Lindlaw, John E., New York, N. Y.—Fire escape. B 56. 564
- 797 Holmes, Horatio L., Providence, R. I.—Cap-bar and stand, combination tool post, with samples of work. (*Pump annex 1-5.*) 564
- 798 Daniels, T. E., Detroit, Mich.—Fire escape and ladder. (*Annex.*) 564
- 799 Wannalansett Manufacturing Co., Boston, Mass.—Linen fire hose, hose reels, pipes, couplings, etc.—Ross Turner & Co., selling agents, 159 Devonshire street, Boston, Mass. A 41. 564

## Hydraulic and Pneumatic Machines and Appliances.

- 800** Clapp & Jones Manufacturing Co., Hudson, N. Y.—Piston steam fire engines. B 62. 564
- 801** Button, L., & Son, Waterford, N. Y.—Steam hand and fire engine. B 42-43. 564
- 802** Zwietsch, Otto, Milwaukee, Wis.—B 25. 564  
*a* Chemical fire extinguisher. 564  
*b* Soda-water apparatus, beer preserver, etc. 565
- 803** Lippincott, Charles, & Co., Philadelphia, Pa.—Apparatus for manufacturing and dispensing soda-water and other aerated beverages. A 27, D 3, and B 61. 565
- 804** Bates, Benjamin, Baltimore, Md.—Copper and silver carbonaters, with attachments. A 20. 565
- 806** Matthews, John, New York, N. Y.—Apparatus for making, bottling, and dispensing soda-water and aerated beverages. A 24. 565
- 807** Puffer, A. D., Boston, Mass.—Beer apparatus, soda, syrup and mineral-water apparatus. A 22. 565
- 808** Postens, Edward, Philadelphia, Pa.—Soda water and aerated beverages in bottles; apparatus and accessories. A 25. 565
- 809** Tufts, James W., Boston, Mass.—Soda water apparatus, generators, fountains, tumbler washers, etc. A 19 and B 23. 565
- 810** Chapman & Co., Madison, Ind.—Portable soda fountain. A 28. 565
- 811** Fergus, James, & David, Philadelphia, Pa.—Machine for bottling and corking liquors. A 22. 565
- 812** Hey, Michael, Philadelphia, Pa.—Beer pump, with bar fixtures, water pressure machine, beer cooler, air bung and regulator. Manufacturer of all kinds of beer pump bar fixtures, patent water pressure machine, patent beer coolers, patent air bung and patent air regulator, and all kinds of beer spigots and coupling, etc. E 68. 565
- 813** Lalancé & Grosjean Manufacturing Co., New York, N. Y.—Seamless soda water fountains. A 21. 565
- 814** Morris, Tasker, & Co., Philadelphia, Pa.—Wrought iron tubes, tools, and brass work. A 70, and C 27. 566
- 815** Kirk, Geo. R., Philadelphia, Pa.—Patent regulating cylinder lubricator, with gauge showing contents, brass cocks, and valves. B 19-20. 566
- 815a** Carpenter, J. M., Pawtucket, R. I.—Machinists' and blacksmiths' taps, pipe fitters' dies, and die stocks. Hill, Clarke & Co., selling agents, Boston, Mass. C 38-40. 566
- 815b** Birkinbine, John, Philadelphia, Pa.—Fire hydrant and case. B 46. 566
- 815c** Powell, Wm., & Co., Cincinnati, O.—Valves and lubricators. B 22. 566
- 815d** Talley, James, jr., Kansas City, Mo.—Liquid faucet, automatic bung. B 29. 566
- 815e** Powell, Wm., & Co., Cincinnati, O.—Regrinding globe valves; automatic lubricators, etc. B 22. 566
- 816** Woodruff & Beaumont, Kankakee City, Ill.—Stop valve. B 19. 566
- 817** Flower, James, & Bro., Detroit, Mich.—Stop valve, fire hydrant, machine for squaring nuts, oil cups. D 20. 566
- 818** Evans, Daisell, & Co., Pittsburg, Pa.—Boiler, oil-well, radiator, artesian and hydraulic tubing; wrought iron pipe, coils, sockets, nipples, and fancy designs. B 25. 566
- 818a** Basshor, Thos. C., & Co., Baltimore, Md.—Automatic relief valve for steam fire engines. A 6. 566
- 818b** Porter, Charles E., Washington, D. C.—Fountain nozzle—prevents clogging. B 19. 566
- 819** Warren Foundry & Machine Co., Phillipsburg, N. J.—Gas and water pipe. (*Outside of Machinery Building.*) 566
- 820** Mohawk & Hudson Manufacturing Co., Waterford, N. Y.—Straightway valves, garden hydrants, fire hydrants. B 21. 566
- 822** Bridgewater Iron Co., Bridgewater, Mass.—Forgings, seamless copper and brass tubes, and bolts, chilled soft rolls, spikes, roll plates, metal sheathing, etc. B 22-23. 566
- 823** Gloucester Iron Works, Philadelphia, Pa.—Cast iron pipes, fire hydrants, stop valves, and lamp posts. B 26. 566
- 825** National Tube Works Co., Boston, Mass.—Iron boiler tubes, iron hydraulic, steam, gas, water, and sewage pipes, cam-cleaved pipe, injector. E 74, and D 10. 566
- 826** Meyer, Henry C., & Co., New York, N. Y.—Faucets, anti-freezing hydrants, street washers, combined hitch post and street washer. B 27. 566
- 827** Crosby Steam Gauge & Valve Co., Boston, Mass.—Steam gauges and safety valves, hydraulic and vacuum gauges, etc. D 67. 566
- 827a** Wood, R. D., & Co., Philadelphia, Pa.—Hydrant. (*Pump annex 4-9.*) 566
- 827b** Shedd, J. Herbert, Providence, R. I.—Hydrant box, taps, stops, gates, cover and valve. C 27, and *Pump annex 4.* 566
- 827c** Douglas, W. & B., Middletown, Conn.—Pumps, hydraulic rams, garden engines, etc. (*Pump annex.*) 566
- 827d** American Tube Works, Boston, Mass.—Brass and copper tubes. B 20-21. 566
- 828** Cook & Pulver, New York, N. Y.—Lubricating cups, and lubricating compound. D 69. 566
- 829** Peet Valve Co., Boston, Mass.—Brass and iron steam valves. B 22. 566
- 830** Merrill & Keiser, Baltimore, Md.—Gauge cocks for steam boilers. D 64. 566
- 831** Wood, R. D., & Co., Philadelphia, Pa.—Fire hydrants, cast iron pipe, Eddy valves, lamp posts, turbine wheels, duplex turbine. Cast iron pipe for gas and water from one and a half to seventy-two inches diameter. Fire hydrants; Mathew's patent anti-freezing sliding frost case; waste opened by positive motion, without springs, weights, or levers. All working parts removable from ground without dig-

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

# THE SUN NEWSPAPER

Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 140,000; its weekly edition over 88,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of THE SUN printed every week during the year ending March 11, 1876.

WEEK ENDING	COPIES PRINTED.	WEEK ENDING	COPIES PRINTED.
March 20.....	849,382	September 18.....	860,868
27.....	845,802	25.....	858,778
April 3.....	857,956	October 2.....	868,985
10.....	863,556	9.....	870,820
17.....	855,076	16.....	878,082
24.....	858,270	23.....	874,625
May 1.....	869,542	30.....	876,160
8.....	867,550	November 6.....	908,580
15.....	877,450	13.....	852,872
22.....	874,946	20.....	847,815
29.....	866,276	27.....	886,248
June 5.....	873,782	December 4.....	845,378
12.....	869,769	11.....	1,042,716
19.....	880,348	18.....	956,294
26.....	883,846	25.....	983,864
July 3.....	898,862	January 1.....	983,987
10.....	867,574	8.....	952,201
17.....	877,400	15.....	958,019
24.....	876,282	22.....	969,910
31.....	874,216	29.....	967,850
August 7.....	865,558	February 5.....	993,030
14.....	875,982	12.....	1,024,647
21.....	880,488	19.....	1,027,209
28.....	870,502	26.....	1,014,766
September 4.....	872,211	March 4.....	1,014,998
11.....	860,756	11.....	1,028,951
TOTAL.....		46,799,769	

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,428,610) pounds of paper were consumed.

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A. J. AIKENS, President.

New York Newspaper Union, 148 and 150 Worth St., New York.	}	315 Newspapers, \$3.00 per line, per week.			
Chicago Newspaper Union, 114 Monroe St., Chicago.		350	"	\$3.50	" "
Milwaukee Newspaper Union, 365 East Water St., Milwaukee.	}	120 " \$1.25 " "			
Aikens Newspaper Union, 143 Race St., Cincinnati.		200	"	\$2.00	" "
Southern Newspaper Union, 227 Second St., Memphis, Tenn.	}	145 " \$1.50 " "			
St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.		73	"	\$ .75	" "

## THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed *co-operative* for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, *with advertisements*, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canada, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

## The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least *one hundred copies every year to each square mile of the settled portions of the United States.*

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

New England . . . . .	78	Illinois . . . . .	117	Nebraska . . . . .	15
New York . . . . .	101	Michigan . . . . .	86	Missouri . . . . .	17
New Jersey . . . . .	27	Wisconsin . . . . .	98	Georgia . . . . .	10
Pennsylvania . . . . .	65	Tennessee . . . . .	29	Alabama . . . . .	32
Virginia . . . . .	24	Kentucky . . . . .	29	Louisiana . . . . .	11
No. and So. Carolina . . . . .	24	Minnesota . . . . .	79	Mississippi . . . . .	29
Ohio . . . . .	122	Iowa . . . . .	85	Other States . . . . .	46
Indiana . . . . .	81				

## AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being *seven hundred thousand seven hundred and thirty copies (700,730).*

SEND TO EITHER OFFICE FOR A CIRCULAR.



## Machinery Fittings, Valves, Tubes, etc., Locomotives.

- ging. Valves; Eddy's patent straight way double gated gates, hung on universal joint; perfectly adjustable duplex turbine so arranged as to develop full power from variable quantities of water; lampposts; turbines; heavy machinery. B 16, and *Pump annex.* 566
- 832** Roots, P. H. & F. M., Connersville, Ind.—Tuyere irons and fire bed, bye pass, gas valves. Patentees and manufacturers of hand blowers for blacksmithing of all kinds; also, portable forges adapted to every variety of work; also, improved Tuyere iron and fire bed combined. (*Pump annex.*) 566
- 833** Allison, W. C., & Sons, Philadelphia, Pa.—Boiler tubes, oil-well tubing, steam pipe, rivets, bolts, nuts, washers, carriage bolts, forgings. B 24. 566
- 834** Cooper, Jones, & Cadbury, Philadelphia, Pa.—Supplies for plumbers, steam fitters, and machinists, etc.: B 19. 566
- 835** Merchant & Co., Philadelphia, Pa.—Seamless brass and copper tubes, sheet and planished copper, brays wire and tubing, tin plates. B 19. 566
- 836** Patent Water & Gas Pipe Co., Jersey City, N. J.—Wrought iron asphalt-cement water pipe. B 22. 566
- 837** Flagg, Stanley G., & Co., Philadelphia, Pa.—Fittings for gas, steam, and water pipes. A 41. 566
- 838** Ludlow Valve Manufacturing Co., Troy, N. Y.—Sliding stop valves for water, gas, and steam, fire hydrants, etc. B 26. 566
- 839** Lunkenheimer, Fred., Cincinnati, O.—Automatic cylinder lubricators and glass oil-cups for steam engines; steam valves, with regrounding device; untrimmed brass castings. B 21 and 22. 566
- 840** Stileman, R. T. H., Philadelphia, Pa.—Water gates, fire hydrants, and station valves. B 19 and 20. 566
- 842** Lewistown Brass & Engine Co., Lewistown, Pa.—Brass goods. C 74. 566
- 843** Walworth Manufacturing Co., Boston, Mass.—Steam heating apparatus; steam and gas fitters' tools, etc.; laundry apparatus, etc.; pipe and fittings for steam, gas, and water. A 76, E 73 and B 41. 566
- 844** Radde, William, 548 Pearl street, New York, N. Y.—Patent glass-lined iron pipe; keeps water, chemicals, and all liquids perfectly pure; prevents poisoning by metallic water pipes; is a safe pipe for aquaria; resists frost, and gives full satisfaction. Patent underground telegraph system; secures perfectly reliable telegraphic connections, under all circumstances, and, thereby, life and property; is composed entirely of inorganic substances. Naked copper wires are drawn through very small glass tubes (3 to 18 and upwards), which are held in the required position in an iron pipe by paraffine wax. Both articles are cheap; need no repairs. B 3-20. 566
- 345** Chapman Valve Manufacturing Co., Boston, Mass.—Water, gas, and steam valves, with Babbitt metal seats. B 33-34. 566
- 846** Jarecki Manufacturing Co., Erie, Pa.—Brass work for steam, gas, water, oil, and iron fittings, adjustable pipe tongs. B 20-21. 566
- 847** Starr, Jesse W., & Son, Camden, N. J.—Castings for gas and water, lamp posts, fire hydrants, stop valves, etc. (*Outside of building.*) 566
- 848** Colwell Lead Co., New York, N. Y.—Lead pipe, sheet lead, block tin pipe, tin-lined lead pipe. B 22-23. 566
- 849** Long Dennis, & Co., Louisville, Ky.—Cast iron gas and water pipes. Have in operation three foundries, with melting and casting capacity of 200 tons daily; supply the gas and water mains for the principal cities and towns west, north, and south. B 20-21. 566
- 849a** Warren Foundry & Machine Co., Phillipsburg, N. J.—Cast iron water pipe. (*In building near Machinery Hall.*) 566
- 849b** Peck Bros., & Co., New Haven, Conn.—Brass-plated cocks, valves, and fittings for plumbers', gas and steam fitters' use. A 40. 566
- 850** Lariwig & Batten, New York, N. Y.—Champagne freezer. B 21. 566
- 851** O'Neill, Andrew, Ansonia, Conn.—Cast iron pipe; patent gas and water mains, jointing without hot lead, a saving of 50 per cent. over the old; O'Neill's patent-planished copper and brass, tinned or nicked; nicked sheet zinc and yellow metal couplings for soil or surface and telegraph pipes. B 3-22, and *outside.* 566
- 852** Mills, Thomas, & Bro., Philadelphia, Pa.—Vertical engine and ice cream freezer combined, ice cream freezers and freezing apparatus. E 65. 568
- 853** Knickerbocker Ice Co., Philadelphia, Pa.—Ice tools, elevators, wagons, and ice machinery. B 18. 568

## Railway Plant, Rolling Stock, and Apparatus.

- 855** Burnham, Parry, Williams, & Co., Philadelphia, Pa.—Locomotives. E 41-43, and E 45. 570
- 855a** Rhode Island Locomotive Works, Providence, R. I.—Passenger locomotive engine; photographs of locomotives. E 46. 570
- 855b** Brooks' Locomotive Works, Dunkirk, N. Y.—Narrow-gauge locomotive. (*West End Passenger R. R.*) 570
- 856** Pease, James H., Reading, Pa.—Historical chart of inventions and improvements of the locomotive and railway system. E 71. 570
- 857** Rogers Locomotive & Machine Works, Paterson, N. J.—Locomotive engine, and tender. D 41, 42, 43. 570
- 858** Danforth Locomotive & Machine Co., Paterson, N. J.—Locomotives. D 28 and 41. 570
- 859** Howe, Henry, Council Bluffs, Iowa.—Apparatus for supplying locomotives with water. D 68. 570
- 859a** Dickson Manufacturing Co., Scranton, Pa.—Portion of the Stone-bridge Lion locomotive. C 27. 570

## Locomotives, Railway Plant, Scales.

- 358b** Polytechnic College, Philadelphia, Pa.—Working model compressed locomotive with horizontal grip drivers for ascending planes. E 44. 570
- 359c** Robinetz, James F., Petersburg, Va.—Model locomotive. (*Empire Transportation Co.'s building.*) 570
- 360** Rowand, John R., Philadelphia, Pa.—Locomotive-power brake. For the safety of life, in collisions, through the crushing of coal, in the ends of the platforms of locomotives. E 48. 570
- 361** Porter, Bell, & Co., Pittsburg, Pa.—Narrow-gauge passenger locomotive and tender. Exclusive specialty light locomotives. Catalogues sent on application. E 44-46. 570
- 363** Philadelphia & Reading Railroad Co., Philadelphia, Pa.—Locomotive and tender. D 44-47. 570
- 364** Dickson Manufacturing Co., Scranton, Pa.—Locomotive and mining machinery. E 49-53. 570
- 365** Pennsylvania Railroad Co., Altoona, Pa.—Locomotive built in 1831, baggage and passenger car combined (old style). (*Outside of building.*) 570
- 366** Mason Machine Works, Taunton, Mass.—Narrow gauge locomotive. (*In use on West End Railroad.*) 571
- 368a** Johnson, Chas. E., & Co., Lansing, Iowa.—Self-coupling railway car. F 35. 571
- 368b** Lebanon Manufacturing Co., Lebanon, Pa.—Coal cars. (*Outdoors, west of Machinery Hall.*) 571
- 367** Riehle Bros., Philadelphia, Pa.—Scales, testing machines, beams, rope-twisters, sand-sifters. E 54. 571
- 368** Fairbanks & Ewing, 715 Chestnut street, Philadelphia, Pa. (Manufacturers, E. & T. Fairbanks & Co., St. Johnsbury, Vt.)—Railroad track, weigh lock, hay, coal, platform, and counter-scales of all descriptions; fine gold and druggists' scales; also improved testing machines for ascertaining the strength of metals, etc. Principal warehouses, Boston, New York, Philadelphia, Baltimore, New Orleans, San Francisco, St. Louis, Chicago, Louisville, Cincinnati, Cleveland, Buffalo, Pittsburg, Albany, Montreal, and London, England. E 56-60. 571
- 369** Brandon Manufacturing Co., Brandon, Vt.—Railroad, merchandise, post-office, and other scales, beams and trucks. E 61-63, and D 8. 571
- 370** Dell, John C., Philadelphia, Pa.—Scales and weights. D 62. 571
- 371** Buffalo Scale Co., Buffalo, N. Y.—Platform, counter, and combination beam scales. D 54. 571
- 372** Crossman, M., Marshall, Ill.—Hand car. (*Outside of Machinery Hall.*) 571
- 373** Becker & Sons, 232 E. 128th street, New York, N. Y.—Becker's construction of improved balances and weights of precision for druggists, chemists, assayers, and for all purposes where accuracy is required. D 51. 571
- 374** Meyers, F., Newark, N. J.—Scales. D 53. 571
- 375** Hitchcock, S. S., Des Moines, Iowa.—Scales. D 47. 571
- 377** Gilly, John L., Columbus, O.—Freight cars; car wheels. (*West of Machinery Hall.*) 571
- 378** Ball, C. A., & Co., Midland Park, N. J.—Trucks. C 9-71. 571
- 379** Willoughby, James D., Philadelphia, Pa.—Notifying scales, frictionless scales. D 8 and 51. 571
- 380** Chatillon, John, & Sons, New York, N. Y.—Spring balances, self-adjusting scales, counter scales, scale beams. D 50. 571
- 381** Harrisburg Car Manufacturing Co., Harrisburg, Pa.—Eight-wheeled box freight cars. B 1-9, and A 5-9. 571
- 383** Price, Lipsett, & Co., Philadelphia, Pa.—Railroad track scale, platform scales. E 76. 571
- 385** Robidoux, Joseph, & Sons, New York, N. Y.—Scale beams, frames, books, etc. D 49. 571
- 386** Steinway & Sons, New York, N. Y.—Metal frames for pianofortes, pianoforte actions. D 49. 571
- 387** Automatic Scale Co., Boston, Mass.—Automatic scales. D 51. 571
- 388** Reinhardt, Chas., Brooklyn, N. Y.—Druggists' gold, and diamond scales. D 62. 571
- 389** Henderson Hydraulic Car Brake Co., Philadelphia, Pa.—Car brake, by steam or hydraulic pressure. D 64-66. 571
- 389a** Singer, Jacob, Harrisburg, Pa.—Automatic car coupler; brakeshoe. E 71. 571
- 389b** Welch, Robert R., Frankford, Pa.—Automatic car coupler. E 74. 571
- 390** Lahaye, J. J., Reading, Pa.—Model cars with automatic couplings. In successful operation on the Philadelphia & Reading Railroad, by which company it was adopted after more than a year's trial. D 64. 571
- 391** Barton, C. S., Philadelphia, Pa.—Railway station indicator, operated from engine by compressed air or by hand. D 64. 571
- 392** Haase, John A., Philadelphia, Pa.—Model of safety car-step. B 41. 571
- 392a** Eames Vacuum Brake Co., Watertown, N. Y.—Injector, valve, vacuum, brake, etc. D 69. 571
- 392b** Decrow, A. W., Bangor, Me.—Smoke conductor; railroad concussion brake. E 69. 571
- 394** Kline, Aaron K., Somerville, N. J.—Model of car coupling. D 69. 571
- 395** Nelson, Nels, Minneapolis, Minn.—Steam and air car brake, car coupler. D 65. 571
- 396** Bing, James, Philadelphia, Pa.—Brake shoe. E 76-77. 571
- 397** Westinghouse Air Brake Co., Pittsburg, Pa.—Automatic brakes, vacuum brakes, air compressors, speed indicators, engine governors, engine. D 67. 571
- 398** Cobb, Z., & Sons, Wilmington, Del.—Elliptic steel springs, for car seats and upholsterers, door springs. E 68. 573

## Railway Plant, Wheels, Springs, Trucks, etc.

- 899 Cayuta Wheel & Foundry Co.,** Waverly, N. Y.—Chilled wheels for cars and engines; specimens and tests. E 64. 573
- 900 Lobdell Car Wheel Co.,** Wilmington, Del.—New and old railroad car wheels, tires, castings, etc. E 65. 573
- 901 Ramapo Wheel & Foundry Co.,** Ramapo, N. Y.—Railroad car and engine wheels. E 71. 573
- 902 Culmer Spring Co.,** Pittsburg, Pa.—Springs for railway purposes. Spiral draft, bolster, journal, equalizing bar, tender, brake release, switch, and valve springs. Spiral springs of all descriptions, made to order. E 69. 573
- 903 Bryant, George B.,** Pottsville, Pa.—Self-oiling car wheels, loose pulleys, cups, car journals; vehicle and carriage wheel hubs; independent car axles. E 66. 573
- 904 French, A., & Co.,** Pittsburg, Pa.—Elliptic springs for cars and locomotives. E 71. 573
- 905 Miltimore Car Axle Co.,** New York, N. Y.—Railroad car truck, with combined, stationary, and revolving axles, loose, independent wheels, and oscillating boxes. Six sets narrow gauge railroad car trucks, fitted with the Miltimore axles and wheels, are in use on the West End Passenger Railway. D 69-70. 573
- 906 Tryon, Geo. K., Son, & Co.,** Philadelphia, Pa.—Car and other bearings and articles of phosphor-bronze, composition, Babbitt, and type metal. E 71. 573
- 907 Davenport, Fairbairn, & Co.,** Erie, Pa.—Engine and car wheels. E 70. 573
- 908 Miles, W. A.,** Copake Iron Works, Copake, N. Y.—Car wheels. E 68. 573
- 909 Middleton, N. & A., & Co.,** Philadelphia, Pa.—Railroad car springs with section of trucks. E 66 and 70. 573
- 910 Barnum Richardson Co.,** Lime Rock, Conn.—Salisbury iron ore, charcoal pig iron, cast chilled car wheels. E 71. 573
- 910a Ewart Manufacturing Co.,** New York, N. Y.—Drive chains. E 62. 573
- 910b National Car Spring Co.,** New York, N. Y.—Elliptic, spiral, rubber, volute and rubber centre spiral car springs. E 68. 573
- 911 Standard Steel Works,** Philadelphia, Pa.—Crucible steel locomotive and car wheel tires, castings, and forgings. E 72. 573
- 912 Midvale Steel Works.—**Works and Office, Nicetown, Philadelphia, Pa. C 23.  
 a Cast steel tires, all sizes and sections; record of trial in hydraulic press of Baldwin locomotive works, April, 1876. 573  
 b Cast steel axles, guaranteed to stand five blows of seventeen hundred pounds' drop, falling twenty-five feet upon four-inch section, bearings three feet apart; axle reversed between blows. 573  
 c Same, bent, cold. 573  
 d Rails, twisted, cold. 574  
 e Solid cast steel forging, diameter thirteen inches: length, twelve feet. Tensile strength per square inch, 83,824 pounds; elastic limit, per square inch, 50,000 pounds; elongation under strain, 16.5 per cent. 513  
 f Solid steel castings; railroad crossing: planed anvil-face, weighing 3980 pounds. 513  
 g Miscellaneous ingots. 513  
 h Ingots of open-hearth steel, broken, showing solidity and characteristics of same. Elastic limit per square inch, 65,018 pounds; tensile strength, per square inch, 123,220 pounds; elongation under strain, 16.5 per cent. 513  
 i Tool, machinery, and spring steel, all shapes, with fractures and evidences of quality. 513  
 j Forgings. 514
- 913 Lang, Wm., Bailey, & Co.,** New York, N. Y.—Cast steel locomotive tires. F 70. 573
- 914 Whitney, A., & Sons,** Philadelphia, Pa.—Car wheels and axles. E 72. 573
- 915 American Paper Car Wheel Manufacturing Co.,** Hudson, N. Y.—Coach, truck and car wheels, of paper, steel and iron combined. E 65. 573
- 916 Washburn Car Wheel Co.,** Hartford, Conn.—Steel-tired car wheels, cast iron centres. E 70. 573
- 916a White, Joseph J.,** Smithville, N. J.—Portable fare-box. D 64. 573
- 917 Sax & Kear,** Pittston, Pa.—Steel-tired truck and car wheels, with cast iron centres. E 73. 573
- 918 Harrison, Samuel L.,** San Francisco, Cal.—Railroad car axle, with independent wheels. E 72. 573
- 919 Schoem, Wm. H.,** Wilmington, Del.—Locomotive, car, and wagon springs. E 67. 573
- 920 Nichols, Pickering, & Co.,** Philadelphia, Pa.—D 67.  
 a Railway elliptic, volute and spiral springs. 573  
 b Cast steel nut-lock washers. 574
- 921 Fields, Wm.,** Wilmington, Del.—Cast steel rails, made direct from iron ore. E 64. 573
- 922 McKee, Fuller, & Co.,** Catsauqua, Pa.—Railroad car wheels. D 65. 573
- 922a Baltimore Car Wheel Co.,** Baltimore, Md.—Chilled cast iron engine and car wheels; samples of iron. E 66. 573
- 922b Atwood Railway Wheel Co.,** New York, N. Y.—Railway wheels. E 69. 573
- 922c Vose, Dinsmore, & Co.,** New York, N. Y.—Elliptic, spiral, rubber, volute and rubber centre spiral car springs. E 68. 573
- 922d Roberts, A. & P., & Co.,** Philadelphia, Pa.—Hammered and rolled car axles. E 72. 573
- 922e Hopkins, D. A.,** Jersey City, N. J.—Car journal boxes. E 69. 573
- 922f Woodbury, James A.,** Boston, Mass.—Elastic steel tire car wheels. E 70. 573
- 922g Taylor Iron Works,** High Bridge, N. J.—Passenger wheels on axle, narrow gauge wheels, sample wheels and sections; axles bent cold, etc. E 69. 573
- 923 Nashua Iron & Steel Co.,** Nashua, N. H.—Steel plates, tires, axles, shaftings, bars, and forgings: iron axles, bars, plates, car wheels, and forgings. E 66-67. 573

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## Railway Plant, Agricultural Machinery.

- 923a** Eccles, James, Philadelphia, Pa.—Frictionless journal box for railroad car axles. D 60. 573
- 923b** Columbia Car Spring Co., New York, N. Y.—Spiral and rubber car springs. E 69. 573
- 923c** Jeffries, James, & Sons, Philadelphia, Pa.—Locomotive, tender, and elliptic carsprings. E 69. 573
- 924** Hamilton Steel Wheel Co., Philadelphia, Pa.—Car wheels and specimens of metal, process of manufacture. D 68. 573
- 925** Jersey City Wheel Foundry & Machine Works, Jersey City, N. J.—Elastic steel tired car wheels, chilled car wheels. D 68. 573
- 925a** Potter & Hoffman, Philadelphia, Pa.—Railway construction tools. B 30. 573
- 925b** Union Car Spring Co., Bridgeport, Conn.—Car springs, and steel. E 71. 573
- 926** Raddin, John, Lynn, Mass.—Elastic car and carriage wheels, automatic brakes, compensating wheels, bunters, elastic chains, etc. E 70. 573
- 927** Fisher & Norris, Trenton, N. J.—"Fisher" patent rail joints for broad and narrow gauge roads. B 6-41, and Annex 1. 574
- 928** Wharton Railroad Switch Co., Philadelphia, Pa.—Railroad switch, steel rail frogs, steel rail crossing. D 71-73. 574
- 930** Jersey City Iron Works, Jersey City, N. J.—Detachable steel rail frogs and crossings, safety switch stands, car replacer. D 71. 574
- 931a** Cochran, John, New York, N. Y.—Cleats to secure rails to the cross ties. E 48. 574
- 931b** Wood, Joseph, Red Bank, N. J.—Adjustable spring, and stationary frogs. E 69. 574
- 931c** Scheiner, J. H., Philadelphia, Pa.—Frogs for cars and signals. E 71. 574
- 931d** Stillman, Wait J., Troy, N. Y.—Track guard. (*Outside of building.*) 574
- 931e** Redding, W. E., New York, N. Y.—Railroad switches. (*Outside of building.*) 574
- 931f** Mansfield Elastic Frog Co., New Haven, Conn.—Railroad frog. E 71. 574
- 931g** Kasson, C. Vallette, Buffalo, N. Y.—Continuous rail, railway frog, and crossing. E 78. 574
- 931h** Seely & Stevens, New York, N. Y.—Pellucidite,—architectural wood finish. (*Used on all wood work in Machinery Hall.*) 574
- 932** Pennsylvania Steel Co., Harrisburg, Pa.—Bessemer steel ingots, blooms, forgings, and rails, open hearth steel ingots and blooms, safety switch, steel rail crossing and frogs, car replacer. D 29, and E 62. 574
- 933** Diamond State Iron Co., Wilmington, Del.—Railway track fastenings and merchant bar iron. Manufacturers of railroad splice bars, all sizes; noted for fit, quality, and finish. Track bolts and spikes of superior iron; extra quality bar and horseshoe iron. E 62. 574
- 933a** Lukens, J. H., Burlington, N. J.—Railway switch stand. D 71. 574
- 933b** Barker, E. W., Portland, Me.—Car coupler. D 70. 574
- 933c** Wood, Joseph, Red Bank, N. J.—Railroad frogs; switch stand. E 69. 574
- 933d** Tuthill, Daniel S., Newburg, N. Y.—Railway tracks—to overcome contraction and expansion. E 72. 574
- 934** Pratt Manufacturing Co., New York, N. Y.—Elastic fish joints. E 62. 574
- 935** Bean, H. & B. F., Pawling, Pa.—Mail pouch holder and catcher for railroad cars while in motion, draw heads for cars. D 66. 575
- 936** Rousseau's Railway Signal Co., New York, N. Y.—Electric railway signals, office indicators, switch locks, circuit closer, etc. D 67. 575
- 937** Wharton, Wm., jr., Philadelphia, Pa.—D 72.
- a** Patent Bessemer steel street railway curves; cast iron street railway curves; cast iron street railway switches; cast iron street railway frogs; cast iron street railway crossing. 574
- b** Patent cast-iron street railway turntable. 575
- 938** Spahn, Emil P., Newark, N. J.—Models for automatic railroad crossings, gates, and signals. E 57. 575
- 939** Ridge, Elmer, Philadelphia, Pa.—Balance folding gates for railway crossings. D 65. 575
- 939a** Lansing, H. S., Philadelphia, Pa.—Railroad crossing safety gate. (*North-east of Machinery Hall.*) 575
- 939b** Williams, Joseph S., Philadelphia, Pa.—Anti-frog tracks, rail switches, and crossings, rail supports, and car ventilator. P 72. 575
- 939c** Heywood, C. L., & Co., Boston, Mass.—Railroad bridge guard, for the protection of train men, at bridges over railroads. E 41. 575
- 939d** Hitchcock Lamp Co., Watertown, N. Y.—Lamps for fat oils and kerosene. D 40. 575
- 939e** Post & Co., Cincinnati, O.—Railway passenger-car trimmings, locomotive head lights. D 71. 576
- Machines used in preparing Agricultural Products.**
- 940** Deal, M., & Co., Bucyrus, O.—Separator and smutter, brush smutter, warehouse separator, and mill machinery trucks, etc. E 57. 580
- 941** Bullock, C. K., Philadelphia, Pa.—Flour mill machinery. E 52. 580
- 942** Huntley, Halcomb, & Hine, Silver Creek, N. Y.—Purifier, bran dusters, bolting cloth. E 47. 580
- 944** Howes, Babcock, & Co., Silver Creek, N. Y.—Eureka smut and separating machine. Eureka brush polishing machine. The worst samples of smutty and foul wheat can be perfectly cleaned with these two machines. Grain separator, with patent zigzag arrangement for separating oats and all other seeds from wheat. Bolting cloth, elevator buckets, mill stone brush, pick handles. E 49. 580
- 944a** Mungon Bros., Utica, N. Y.—Corn grinding mill, eye spindles, levers, etc. E 61-62. 580

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

## Agricultural Machinery.

- 944<sup>a</sup>** Cumbie & Donald, New York, N. Y.—Mechanical oven model. E 66, 580  
67.
- 944<sup>b</sup>** Stangeland, Elias, Rockdale, Minn.—Grain steaming machine. E 60. 580
- 944<sup>d</sup>** Teter, W. L., Bristol, Tenn.—Self-regulating silent mill feed. E 63. 580
- 945** Noye, John T., & Son, Buffalo, N. Y.—Flour mill models, portable mills, millers' tools, middlings purifier, bran duster. E 47. 580
- 946<sup>a</sup>** Gilbert, Calvin, Chambersburg, Pa.—Combined separating and scouring smut machine. E 57. 580
- 946** Ingraham & Beard, Chicago, Ill.—Grain scourer, smutter separator, grader, dustless malt and warehouse separator and grader. E 54. 580
- 947** Young, J., & S. Bernheisel, Green Park, Pa.—Flour bolt and middlings purifier combined, with bran separator and duster attached. E 57. 580
- 948** Harris, Clinton S., Elizabeth, N. J.—Smut and scouring machine, and suction fan for cleaning grain. E 58. 580
- 949** Richardson, D. M., Detroit, Mich.—Improved patent wheat scourer, polisher, and separator. The principles covered in this machine may be briefly stated as follows, viz.: It scours and polishes the wheat thoroughly, without breaking, cutting, scratching, wearing away, or impairing the bran fibre, thereby leaving the bran full strength. When the wheat goes upon the burrs, the bran comes off in large flakes or patches, and passes through without pulverizing and mixing with the flour; the blast can be adjusted to secure any desired separation. F 60. 580
- 950** Turner, Parks, & Co., Cuyahoga Falls, O.—Rolling screen separator, middlings purifier, malt scourer, garlic, rabbit, and straw extractor. E 58. 580
- 952** Barnard & Leas Manufacturing Co., Moline, Ill.—Smutter, scourers, separator, flour packer, corn sheller, corn cleaner. E 48. 580
- 952<sup>a</sup>** Conklin, N. A., Brooklyn, N. Y.—Corn chitting and hominy mill. F 48. 580
- 952<sup>b</sup>** Roland, Francis, & Co., Reading, Pa.—Grain decorticator and separator; model of water wheel. E 61. 580
- 954** Woodward, Thos. B., Philadelphia, Pa.—Mill stones, mills, flour mill machinery. E 46. 580
- 955** Baltimore Pearl Hominy Co., Baltimore, Md.—Hominy mill or corn granulator. Manufacturers of breakfast hominy, samp, corn flour, pearl meal, etc. Sole owners and manufacturers Patent Buckeye Hominy Mill. F 59. 580
- 957** Griscom & Co., Pottsville, Pa.—Diamond mill stone dressing machines. (Will do as much work in one hour as can be done in a day with the pick.) Used by best mills. Thirty days' trial allowed. E 53. 580
- 958** Harrison, Edward, New Haven, Conn.—Vertical burr stone mills for grain, minerals, etc., and combined flouring mill and bolter. E 59. 580
- 959** Leonard & Silliman, Bridgeport, Conn.—Burr stone flour and grist mills. E 56. 580
- 959<sup>a</sup>** United States Attrition Co., New York, N. Y.—Attrition mill for pulverizing ores, cereals, etc. F 49. 580
- 959<sup>b</sup>** Allis, Edward P., & Co., Milwaukee, Wis.—Middlings purifier and duster, mill stones, cockle separator, and crushing rolls. E 56. 580
- 959<sup>c</sup>** Hanna, C. T., Keokuk, Iowa.—Wheat steamer and dryer. E 57-58. 580
- 959<sup>d</sup>** Macarthy, John, New York, N. Y.—Bran picker and duster. E 60. 580
- 959<sup>e</sup>** Mecutchén, Jesse G., Philadelphia, Pa.—Smut machine, and mill stones. E 58-59. 580
- 959<sup>f</sup>** Throops Grain Cleaner Co., Auburn, N. Y.—Grain scourer and separator; wheat brushing machine. E 68. 580
- 959<sup>g</sup>** Kreider, Campbell, & Co., Philadelphia, Pa.—E 50.  
*a* Grain mill. 580  
*b* Spice mill. 585
- 960** Lafferty, H. W. & R., Gloucester, N. J.—Centrifugal sugar-draining machines, with mixer and elevator. E 46. 581
- 960<sup>a</sup>** Schemede, J. W. R., New York, N. Y.—Evaporator. E 57. 581
- 960<sup>b</sup>** Colwell & Bro., New York, N. Y.—Vacuum pan and sugar refining apparatus. E 79. 581
- 960<sup>c</sup>** Hepworth, S. S., New York, N. Y.—Centrifugal extractor. E 79-80. 581
- 961** Mills, Thomas, & Bro., 1301 and 1303 North Eighth street, Philadelphia, Pa.—Confectioners' tools, fruit-drop machine and rollers; flat stick, sour drop, and paper fringing machines. Patent candy slicer, coconut grater, cutters, egg beater, and toy machine. E 65. 582
- 962** Gardner, Mrs. John, Philadelphia, Pa.—Confectionery tools, candy machinery. F 48. 582
- 963** Croft, Wilbur, & Co., Philadelphia, Pa.—Revolving pans for making confections. E 64. 582
- 964** Mitchell, J. H., Philadelphia, Pa.—Coconut grater, candy slicer. B 80. 582
- 965** Anderson, J. P., Philadelphia, Pa.—Coconut graters, candy slicers. F 45. 582
- 966** Colburn, Levi J., Chicago, Ill.—Confectionery; process of manufacture. F 46. 582
- 967** Archer & Brownell, Richmond, Va.—Process of manufacturing plug and twist chewing and smoking tobacco, cigarettes. F 57. 584
- 967<sup>a</sup>** Wulstein, Henry, New York, N. Y.—Tobacco granulator. F 55. 584
- 967<sup>c</sup>** Tygh, James F., Philadelphia, Pa.—Tobacco stripping and booking machine; cigar moulds. F 61. 584
- 968** Cain, P. O., & Co., Philadelphia, Pa.—Cigar moulds. F 55. 584
- 969** Enterprise Manufacturing Co., Patented Hardware Manufacturers and Iron Founders, American and Dauphin streets, Philadelphia, Pa.—Coffee, drug, and spice mills, twenty sizes; measuring faucets, tobacco cutters, cheese knives, sad irons, bung-hole borers, sausage stuffers, fruit and jelly pressers. F 56. 585
- 970** Dell, John C., Philadelphia, Pa.—Coffee mills, scales. D 62. 585

## Agricultural Machinery, Boats, Vessels, and Appliances.

- 971 Boyd, G., Philadelphia, Pa.—Coffee roaster, coffee cooler. (*Annex 1.*) 585
- 972 Weikel & Smith Spice Co., Philadelphia, Pa.—Coffee roasting and spice mill machinery. (*Annex 1.*) 585
- 974 Troemner, Henry, 710 Market street, Philadelphia, Pa.—Coffee mills; manufacturers of scales and balances in use at the U. S. Treasury, and all the U. S. Mints and Assay Offices. F 55. 585
- 975 McCoilum, L. A., New York, N. Y.—Cracker machine, dough mixer, reversible dough brake, mechanical oven. E 66. 585
- 976 Silver & Deming Manufacturing Co., Salem, Ohio.—Meat choppers and meat stuffers. F 54. 586
- 976a Speihman, Geo., Strasburg, Pa.—Meat chopper. F 55. 586
- 977 Ruger, J. W., & Co., Buffalo, N. Y.—Cracker, bread, and cake machinery and bakers' tools. F 62. 586
- 978 Murray Iron Works Co., Burlington, Iowa.—Meat choppers, lard presses, sausage stuffers, etc. This exhibit attracts special attention of butchers and sausage makers. The draw-cut movement of the knives (which is that of a knife used by hand), is the peculiar feature which is claimed, distinguishes these machines from all others, and secures to them a clean cut, without noise or pounding and with very little wear of the parts. Some of them have been in constant use for over four years, without repairs of any kind. Their beauty, and the smoothness and precision of their work, attracts very general attention from the many who are interested in this kind of machinery, they being the only "draw-cut" machines made. F 60. 586
- 979 Huber & McCarter, Lancaster, Pa.—Steam meat chopper. E 60. 586
- 979a Roberts, Carle, & Co., New York, N. Y.—Hand cutter. E 57. 586
- 979b Kenyon, J. H., Plainfield, N. J.—Hand and power meat choppers. F 61. 586
- 979c Nittinger, August, jr., Philadelphia, Pa.—Butchers' and packers' machinery. F 54. 586
- 980 Sauter, Charles, Reading, Pa.—Malt cleaning machine, cylinder-wheel malt chopper. E 69. 587
- 981 Reford, J. W., Philadelphia, Pa.—Grain-distilling and vapor-rectifying apparatus. E 69. 587
- 982 Boese, C., & Co., New York, N. Y.—Capping machines, for adjusting metallic capsules on bottles, jars, etc. E 68. 587
- Aerial, Pneumatic, and Water Transportation.**
- 982a Sewall, Day, & Co., Boston, Mass.—Shrouding, rope, etc. E 39. 590
- 983 Hartness, James, Detroit, Mich.—Section balloon, with life-boat attached. D 32. 592
- 984 Swarsmayer, John, Philadelphia, Pa.—Flying machine model. D 33. 592
- 985 Page, E. W., New York, N. Y.—Boat oars. D 32. 594
- 986 Bolles, J. N., Baltimore, Md.—Models for submarine work. A 56, and outside. 594
- 987 Fields, William, Wilmington, Del.—Models of armor-ship, and field-battery gun. E 64. 594
- 988 Chomel, I. A., Brooklyn, N. Y.—Swinging berths and platforms for prevention of sea-sickness. D 31. 594
- 989 Grinnell, Irving, New Hamburg, N. Y.—Ice yacht. D 28-31. 594
- 989a Lyman, William, Middlefield, Conn.—Bow-facing rowing gear. D 31, and on lake. 594
- 990 Wilen, George C., Philadelphia, Pa.—Small boat. D 32. 594
- 991 Richards, H. J., West Troy, N. Y.—Ice yacht. D 34. 594
- 992 Walton, Lewis W., New York, N. Y.—Row-lock for boats. D 35. 594
- 993 Burr & Co., New York, N. Y.—Tackle blocks, etc. D 34. 594
- 993a Perry, E. L., New York, N. Y.—Life raft. D 37. 594
- 993b Whistler, Thos., Baltimore, Md.—Non-capsizeable life boat. D 31. 594
- 993c Stoner, John B., New York, N. Y.—Floating lighthouse. D 35-36. 594
- 994 Desmond, Timothy, New York, N. Y.—Pair-oared gig. D 36. 594
- 994a Bird, John, Philadelphia, Pa.—Glass moulding press. (*Annex 3.*) 594
- 995 Adams, John & Co., Gloucester, N. J.—Life preserving mattress, self-righting life boat. D 33. 594
- 995a Lyman, W., Middlefield, Conn.—Rowing gear. D 31, and on lake. 594
- 995b Jackson, James L., New York, N. Y.—Steering apparatus: process and apparatus for making patterns. C 35-36. 594
- 996 Waters, E., & Sons, Troy, N. Y.—Paper boats, barrels, packages, cylinders, etc. D 35-36. 594
- 997 Bryant, John L., & Co., Philadelphia, Pa.—Double life boat. D 33. 594
- 998 Von Behren & Shaffer, Stryker, O.—Boat oar, handspike. D 38. 594
- 999 Smith, D. S., Philadelphia, Pa.—Canoe, "Dolphin," of Queenstown, Md. D 38. 594
- 1000 Jones, John McA., Philadelphia, Pa.—Boat-detaching apparatus. D 32. 594
- 1001 Begin, Peter N., Detroit, Mich.—Revolving head light for vessels. D 39. 594
- 1002 Hook, Gilman, West Harwich, Mass.—Toy yacht. D 32. 594
- 1003 Rider Life Raft Co., New York, N. Y.—Life rafts. D 40. 594
- 1004 Miles, Geo. W., Philadelphia, Pa.—Single scull shell. D 40. 594
- 1005 McIlverly, S. W., Belfast, Me.—Model for clipper ship. D 40. 594
- 1006 Powell, Richard, Washington, D. C.—Improvement in building iron vessels. D 39. 594
- 1006a Bradlee & Co., Philadelphia, Pa.—Cable and rigging chains. D 38. 594
- 1006b Fearon, Thomas, Yonkers, N. Y.—Shell boats, composite planking. E 40. 594

## Boats, Vessels, and Appliances.

- 1006<sup>c</sup> Roach, John B., Chester, Pa.—Models of vessels, shaft and frogging. E 40. 594
- 1006<sup>d</sup> Glass, Wm., Philadelphia, Pa.—Race boat. D 36-37. 594
- 1006<sup>e</sup> Englis, John, & Son, Greenpoint, N. Y.—Steamship models. D 34. 594
- 1006<sup>f</sup> Flower, Wm., Bangor, Me.—Life saving apparatus, boat lowering, and detaching apparatus, etc. E 35. 564
- 1006<sup>g</sup> Goldie, George, Princeton, N. J.—Rowing machine. D 40. 594
- 1006<sup>h</sup> Pusey, Jones, & Co., Wilmington, Del.—Photographs and models of steamboats and steamships. C 74. 594
- 1006<sup>i</sup> Harrington, Charles B., Bath, Me.—Schooner yacht. D 32. 594
- 1006<sup>j</sup> Parcells, Thomas, Philadelphia, Pa.—Full-rigged schooner sailing yacht. D 49. 594
- 1006<sup>k</sup> Mallory, W. H., Bridgeport, Conn.—Steam yacht. *On Schuylkill river.* 594
- 1006<sup>l</sup> Cort, Mrs. C. A. van, New York, N. Y.—Torpedo boat. D 31. 594
- 1006<sup>m</sup> Francis, Frank, Philadelphia, Pa.—Model of bark. D 36. 594
- 1006<sup>n</sup> Johnson, Hilary C., Philadelphia, Pa.—Miniature model of a full rigged ship. D 40. 594
- 1006<sup>o</sup> Kahnweiler, David, New York, N. Y.—Cork jacket. D 40. 594
- 1006<sup>p</sup> Ormsbee, M., Brooklyn, New York.—Sleeve life preservers and collar rescuer. "The Sleeve Life Preservers" are used to great advantage in pleasure-swimming, and, as a teacher of the novice, learning the art. To skaters they afford comfort, keeping the arms warm and the body harmless from falling, besides saving life should the ice break, preventing cramp in the arms, however cold the weather. Cricketers also wear them. They make two excellent pillows for traveling on the cars, boats, etc. They can be placed side by side for a cushion, and are easily carried in the pocket, and can be put on very quickly. "The Collar Life Preserver" rescues persons from drowning; is used also as a cushion for the house, counting-room, or traveling in the cars or boats, and as a cabinet invalid chair cushion. It can be put on instantly for life saving, even by a child two years of age; is used as a seat in the parks to prevent colds and sickness from sitting upon the damp ground. Bathing-house proprietors can be furnished with life preservers at prices that must assure them a handsome income from their sale or rental, with bathing-dresses, and by keeping the Collar Life Preservers always ready, none of their patrons can possibly be drowned, as they can be rescued in less than a minute by any of the assistants. Either of the preservers costs \$5; or \$1, to hire for a trip to Europe, or elsewhere. For particulars, address Capt. M. Ormsbee, patentee and manufacturer, 32 Willow street, Brooklyn, New York. D 40. 594
- 1006<sup>q</sup> Tipton, John, Philadelphia, Pa.—Model of boat. D 36. 594
- 1006<sup>r</sup> Rowland, T. F., Greenpoint, N. Y.—Steam launch, metallic life boat. A 69 and D 31. 594
- 1006<sup>s</sup> Roach, John, & Son, New York.—Models, armor plate, and marine engine work. E 40. 594
- 1007 United States Bunting Co., Lowell, Mass.—Bunting and flags. F 40. 594
- 1008 Massachusetts State Commission, Leverett Saltonstall, Commissioner, N. E. Tower Main Building, Philadelphia, 18 Pemberton Square, Boston, Mass.—Water craft, old and new, and articles which take part in their construction and use,—being an historical exhibit of the growth of the marine interests of Massachusetts, from the earliest periods to the present time. F 38-40. 594
- 1009 American Life-Saving Suit Co., New York, N. Y.—Life-saving suit for ocean travel, surf belt for river travel. D 33. 594
- 1010 Wyatt, John L., Yonkers, N. Y.—Full-rigged clipper South Sea whale ship. E 38. 594
- 1011 Gildersleeve, S., & Sons, Gildersleeve's Landing, Conn.—Working models of wooden, steam, and sail vessels, for profitable freighting business. Largest carrying capacity on light draft with good sailing qualities. D 40. 594
- 1012 Poillon, C., & R., New York, N. Y.—Model of schooner yacht "Sappho" and pilot boats "Thomas S. Negus" of N. Y., and "E. C. Knight," of Philadelphia. E 39. 594
- 1013 Webb, Wm. W., New York, N. Y.—Models and plans of celebrated naval and other vessels. D 31. 594
- 1014 Cannon, John D., New Castle, Del.—Hooped skiff boat, without timbers or knees. D 31-32. 594
- 1015 Baird & Huston, Philadelphia, Pa.—Steam yacht. D 38-40. 595
- 1016 Harlan & Hollingsworth Co., Wilmington, Del.—Ships, models, drawings, and plans of vessels and machinery, paintings of ships and steamboats. D 29. 595
- 1017 Griffiths, John W., New York, N. Y.—Model of ocean steamship; "The Progressive Ship Builder." D 40. 595
- 1018 Zantsinger, Dan'l W., Washington, D. C.—Model and section of steamship, improvement in construction of iron vessels. The above improvement consists in providing small watertight compartments entirely surrounding the hull of the vessel. D 40. 595
- 1019 Grant, D. Conrad, Houghton, Mich.—Adjustable ice plow and naval ram, or submarine mortar, attached to miniature boat. D 40. 594
- 1020 New York Safety Steam Power Co., New York, N. Y.—Steam launch. E 38-40. 595
- 1021 Crowell, J. W., & Co., Cambridge, Md.—Models for steam and sail vessels. Builders of all classes of wooden vessels. Frames furnished of best quality of Chesapeake white oak. We invite inquiry as to our facilities. D 40. 595
- 1022 Thwait, Charles, Astoria, N. Y.—Model of steamship, with working machinery. D 35. 595
- 1022<sup>a</sup> Sulter, Frederick, Philadelphia, Pa.—Propeller screws, models and drawings of boiler, etc. D 78. 595

## Vessels and Appliances, Machinery in Use.

- 1022<sup>b</sup> American Steamship Co., Philadelphia, Pa.**—Models and paintings of the steamers of the company. C 41. 595
- 1023 Pennsylvania Combined Iron & Steel Association, Philadelphia, Pa.**—Combined iron and steel armor plate, steel bore wrought iron guns. D 28-30. 594
- 1024 American Dredging Co., 10 South Delaware avenue, Philadelphia, Pa.**—Improved grapple and dipper dredges, and machinery for river and harbor improvements. E 40. 596
- 1024<sup>c</sup> Hawley, Abel, Washington, D. C.**—Rotary dredge. E 40. 596
- 1024<sup>b</sup> Eau Claire Lumber Co., Eau Claire, Wis.**—Sheer rudder loom and pontoon bridge. (*Saw mill.*) 596
- 1025 Cox, Frank, Philadelphia, Pa.**—Model for coffer dam for removing propellers from ships. E 39-40. 596
- 1026 Coffin & Woodward, Boston, Mass.**—Capstans, chain-stopper, screw-striker, and rudder-supporter, elastic-traveler, portable winch, windlasses, pumps, etc. Best modern improved articles. D 39. 597
- 1026<sup>a</sup> Robinson, R. M., Philadelphia, Pa.**—Simple and compound anchor, with apparatus. D 5. 597
- 1027 Sickles, F. E., Providence Steam Engine Co., Providence, R. I.**—Original models of some of exhibitor's early inventions, now in use in this country and abroad, viz.: Trip cut-off, patented 1842, and improvements thereon patented 1845; casting steam chest on cylinder, patented 1845; improvement on working exhaust valves, patented 1844; first machine made or used to apply power to the rudder of vessels (in operation), application filed 1849, patented in 1860, etc.; improved compound engine, patented 1875; also original models of improvement in sinking pneumatic piles; also other original models. D 38. 597
- 1028 Getchett, John S., Washington, Me.**—Capstan. D 40. 597
- 1029 American Ship Windlass Co., Providence, R. I.**—Capstans, windlass models. D 40. 597
- 1030 Hutchinson, T. C., Philadelphia, Pa.**—Anchor. D 40. 597
- 1030<sup>c</sup> Hamilton, S. M., Baltimore, Md.**—Hydraulic cement. (*Annex 3.*) 103
- 1031 Hampton Emery Co., Chester, Mass.**—Emery in grains. B 37. 106
- 1032 Potts Bros., Pottstown, Pa.**—Flanged boiler iron and boiler flue iron. B 24. 111
- 1032<sup>a</sup> Potter & Hoffman, Philadelphia, Pa.**—Iron and steel; boiler plate; pig and bar iron. B 30. 111
- 1033 Rittenhouse, E. W., & Bro., Baltimore, Md.**—Terra-cotta pipe. (*Outside of building.*) 206
- 1035 Sellers, Wm., & Co., Philadelphia, Pa.**—Electric registers, showing number of admissions at gates throughout the day. 321
- 1036 Ledgerwood Manufacturing Co., New York, N. Y.**—Ash-boiler. 597
- 1037 American Twist Drill Co., Woonsocket, R. I.**—Emery grinding machine, used in the Centennial machine shop. 595
- 1038 Stillwell & Bierce, Dayton, O.**—Heater used in boiler house No. 4. 506
- 1039 McNeil, George, Philadelphia, Pa.**—Heater used in boiler house No. 4. 506
- 1040 Sellers, Wm., & Co., Philadelphia, Pa.**—Lathes, used in the Centennial machine shop. 510
- 1041 Prentice, A. F., & Co., Worcester, Mass.**—Lathe and drill, used in the Centennial machine shop. 510
- 1042 Fitchburg Machine Co., Fitchburg, Mass.**—Lathe and drill for use in the Centennial machine shop. 510
- 1043 Smith, H. B., Smithville, N. J.**—Full set of wood-working tools for Centennial carpenter shop. 510
- 1044 Keystone Portable Forge Co., Philadelphia, Pa.**—Three 6 power forges 54 inches in diameter, for the Centennial machine shop. 514
- 1045 Stephens Patent Vise Co., New York, N. Y.**—Vises, used in the Centennial machine shop. 514
- 1046 Fisher & Norris, Trenton, N. J.**—Vises and anvils, used in the Centennial machine shop. 514
- 1047 Mitchell, J. E., Philadelphia, Pa.**—Grindstones, used in the Centennial machine shop. 515
- 1048 Andrews, W. D., New York, N. Y.**—50 horse power boiler and pumps; boiler for use, and pumps for supplying cataract. 519
- 1049 Abendroth & Root, New York, N. Y.**—100 horse power boiler, supplying steam to steam pumps, etc. 519
- 1050 Steam Generator Manufacturing Co., Philadelphia, Pa.**—100 horse power boiler, supplying steam to steam engines. 519
- 1051 Babcock & Wilcox, New York, N. Y.**—150 horse power boiler, supplying steam to steam pumps, etc. 519
- 1052 Harrison Boiler Works, Philadelphia, Pa.**—100 horse power boiler, supplying steam to steam engine. 519
- 1053 Exeter Machine Works, Boston, Mass.**—75 horse power boiler, supplying steam to steam pumps, etc. 519
- 1054 Kelly, W. E., New Brunswick, N. J.**—50 horse power boiler, supplying steam to steam pumps, etc. 519
- 1055 Lynde, J. D., Philadelphia, Pa.**—50 horse power boiler, supplying steam to steam engines. 519
- 1056 Miller, Charles B., Philadelphia, Pa.**—Boiler, used in boiler house No. 4. 519
- 1057 Smith, C. D., Boston, Mass.**—Boiler, used in boiler house No. 3. 519
- 1058 Lowe & Watson, Bridgeport, Conn.**—Boiler, used in boiler house No. 3. 519

## Machinery and Apparatus Especially Adapted to the Requirements of the Exhibition.

- 1034 Pease, F. S., Pease, Buffalo, N. Y.**—Furnishes all the oil used for the shafting in Machinery Hall. 201



## Machinery in Use.

- 1059 Mast, P. P., & Co., Springfield, O.—Boiler, used in saw mill boiler house. 550
- 1060 Baxter Steam Engine Co., New York, N. Y.—Engine and boiler, used in Nevada quartz mill. 550
- 1081 Bowser, J. C., & Co., Fort Wayne, Ind.—Engine and boiler for use in shoe and leather building. 550
- 1062 Peirce Rotary Tubular Boiler Co., New York, N. Y.—Rotary boiler, for use in saw mill boiler house. 550
- 1063 Baxter Steam Engine Co., New York, N. Y.—Engine, used in the Women's Pavilion. 550
- 1064 Hoadley, J. C., Co., Lawrence, Mass.—80 horse power engine and boiler, for use in Machinery Hall. 550
- 1065 Williamson Bros., Philadelphia, Pa.—Portable hoisting engine, used while installing machinery. 552
- 1066 Gates, Josiah, Lowell, Mass.—One 30 inch double leather driving belt. 553
- 1067 Hoyt, J. B., New York, N. Y.—One 15 inch and one 30 inch belt, for driving shafts in Annex 1 and 2. 553
- 1068 Yale Lock Co., Stamford, Conn.—Three pulley blocks, for use in Machinery Hall. 553
- 1069 Fales, George S., Pawtucket, R. I.—One 30 inch double driving belt. 553
- 1070 Burgess & Son, Pawtucket, R. I.—One 30 inch double driving belt. 553
- 1071 Alexander Bros., Philadelphia, Pa.—One 30 inch double driving belt. 553
- 1072 Heims, Anton, New York, N. Y.—One 30 inch double driving belt. 553
- 1073 Schieren, C. A., New York, N. Y.—Belt for use in No. 4 shaft. 553
- 1074 Page, B. & P. Co., Concord, N. H.—One 30 inch double driving belt, in No. 2 shaft. 553
- 1075 Rorer, Thos. J., Philadelphia, Pa.—Belt for driving shaft in Annex 3. 553
- 1076 Goodyear Rubber Co., Philadelphia, Pa.—Belt for driving shaft in Pump annex. 553
- 1077 Jones & Laughlin, Pittsburg, Pa.—Shafting, pulleys and hangers, for driving Centennial machine shop tools. 553
- 1078 Fitta, B., Worcester, Mass.—Steam whistle, for use during exhibition. and 4. 555
- 1079 Woodruff, James, Rahway, N. J.—Dampers, used in boiler houses Nos. 3 and 4. 555
- 1080 Edson, M. B., New York, N. Y.—Steam gauges, for use in boiler houses Nos. 3 and 4. 555
- 1081 Nathan & Dreyfus, New York, N. Y.—Patent oil cups, for one line of shafting. 555
- 1082 Lawrence, W. H., Brooklyn, N. Y.—Safety oil cans, used in Machinery Hall. 555
- 1083 Barr, Robert J., Philadelphia, Pa.—Elliptic steam trap. 555
- 1084 Sluthour & Mitzner, Philadelphia, Pa.—Pump, for use in boiler house. 560
- 1085 Pratt, R. V., New York, N. Y.—Injector, used in boiler house No. 3. 555
- 1086 Caw, A., New York, N. Y.—Two steam pumps, in boiler house. 560
- 1086a Worthington, Henry P., New York, N. Y.—Duplex pumping engine, furnishing total supply of water for the Centennial Exhibition. (*On Schuylkill river, foot of Lansdowne valley.*) 560
- 1087 Niagara Pump Works, Brooklyn, N. Y.—Pump, for use in boiler house. 560
- 1088 Norwalk Iron Works, South Norwalk, Conn.—Five Earle pumps, for use in boiler house No. 6. 561
- 1089 Blake Manufacturing Co., New York, N. Y.—Pumps, for supplying boilers in boiler house No. 4. 561
- 1090 Knowles Steam Pump Works, New York, N. Y.—Pumps, for supplying boilers in boiler house No. 2. 561
- 1091 Philadelphia Hydraulic Works, Philadelphia, Pa.—Pump, for use in boiler house No. 2. 561
- 1092 Burton, S., & Son, Waterford, N. Y.—Fire engine, for use. 564
- 1092a Scott-Uda, Mrs. M., New York, N. Y.—Aerial ladder. (*In fire station 1.*) 564
- 1093 Amoskeag Manufacturing Co., Manchester, N. H.—Fire engine and hose carriage, for use. 564
- 1094 Silsby Manufacturing Co., Seneca Falls, N. Y.—Two engines and hose carriages, for use. 564
- 1095 Nichols, S. B., Burlington, Vt.—Fire engine and hose carriage, for use. 564
- 1096 Hoyt, J. B., New York, N. Y.—Three driving belts, for main driving pulley. 564
- 1098 Gutta-Percha Co., New York, N. Y.—Hose and two driving belts. 564
- 1099 Lansing, H. S., Philadelphia, Pa.—Safety railroad gate. 575
- 1100 Cook & Pulver, New York, N. Y.—Lubricators, for use in annexes. 576
- 1101 Hanmore, J. W., New York, N. Y.—Felting, covering steam pipe in Machinery Hall. 576
- 1102 O'Hara, O. M., Boston, Mass.—Felting, covering steam pipe in Machinery Hall. 576
- 1103 Johns, H. W., New York, N. Y.—Felting, covering steam pipe in Machinery Hall. 576
- 1104 Chalmers, Spence & Co., New York, N. Y.—Felting, covering steam pipe in Machinery Hall. 576
- 1105 Sleuster, John T., Philadelphia, Pa.—Felting, covering steam pipe in Machinery Hall. 576
- 1106 Snider, D. M., Philadelphia, Pa.—Felting, covering steam pipe in Machinery Hall. 576

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

# GREAT BRITAIN.

(South of North Avenue, Columns 16 to 17 A to E; also in Pump Annex.)

## Metal, Wood, Stone, Cloth, Paper-working Machinery.

### Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

- 1 Holmes, Joseph E., Payton, Walter, & Taylor, Fenner B., London.  
  - a Rock boring machine. 500
  - b Coal and rock cutting machine. 502
- 2 Baird, William, & Co., Gartsherrie Iron Works, Coatbridge, Scotland.—Coal-cutting machine. 502
- 3 Hurd, Frederick, & Co., Wakefield.—Coal-cutting machine; ratchet wedge shovel. 502
- 4 Macdermott, Martin, London.—Rock and coal perforators; machines for under-cutting coal; screw wedge for breaking down coal. 502
- 5 Hardy Patent Pick Co. (limited), Sheffield.—Implements for coal, ironstone, gold, and silver mining, for quarrying and excavating; cast steel picks. 502
- 6 Pickering, Jonathan, Globe Works, Stockton-on-Tees.—Pulley blocks, hoists. 503
- 9 The Dunston Engine Works Co., Gateshead-on-Tyne, Durham.—Stone breaker; combined stone breaker and bone cutter. 505
- 10 Kimberley, Nathan Gold, London.—Centrifugal pulverizing mills. 505
- 11 Siemens, Charles William, London.—Models of furnaces for metallurgical operations, glass melting, etc. 506
- 12 Smith, Dillwyn, Liverpool.—Mechanical stokers and fire bars. 506
- 13 Sugg, William, Vincent Works, London.—Gas burners; a new illuminating power meter. 509

### Machines and Tools for working Metal, Wood, and Stone.

- 14 Roberts, William, Bootle, near Liverpool.—Self-acting painting machine for venetian blinds, laths, hoop iron, etc. 510
- 15 Massey, B. & S., Openshaw, Manchester.  
  - a Circular saw for cutting hot iron and steel. 511
  - b Steam hammers; steam stamps; models of steam hammers; samples of forgings. 514
- 16 Wright, Peter, & Sons, Constitution Hill Works, Dudley, Worcestershire.—Anvils; vises; tools of various kinds; hammers. 514
- 17 Brooks & Cooper, Mousehole Forge, Sheffield.—Anvils, vises, hammers, shear steel, etc. 514
- 17a Fairbairn, Kennedy & Naylor, Leeds.—Quadruple boring machine. 515

18 Beesley & Sons, Abbey Road Boiler Works, Barrow-in-Furness.—Punching, shearing, and angle-cropping machine for iron, steel, or other metals. 515

18a Greenwood & Batley, Albion Works, Leeds.—Bolt forging machines. 515

19 Heap, Joshua, & Co. (limited), Oldham.—Tools and machines, taps, hobs, pipe; bolt-screwing and nut-tapping machines. 515

21 Shearer, Hugh, London.—Machine for dressing stone. 516

22 Lavers, Alfred Hamilton, London.—Testing machine to show strength of cement. 517

### Machines and Implements of Spinning, Weaving, Felting, and Paper Making.

- 23 Fleming, Thomas, & Son, West Grove Mill, Halifax.—Card clothing for carding machines, etc.; needle-point teeth. 520
- 24 Ambler, William, Bradford, Yorkshire.—Machine for making paper cop tubes used in spinning; machine for cleaning the teeth of wheel castings. 520
- 25 Mackenzie, Duncan, London.—Self-acting reader for the Jacquard loom. 520
- 26 Ingham, John, & Sons, Croft Head Works, Thornton, near Bradford.—Case of shuttles, etc., for weaving; tacking, shuttle pikes, stocks, and bowls for weaving. 520
- 27 Platt Bros., & Co. (limited), Hartford Works, Oldham, Lancashire.—Cotton gin. 521
- 28 Gadd, Thomas, Manchester.—Printing machine for large size garment rollers, angular engine; combined engraving and punching machine; setting-out table, with micrometer; combined varnishing and ruling machine; machine for setting out; ruling machine, cams, engravers' block, and lathe. 521
- 29 Lancaster, William, Willow Iron Works, Accrington, Lancashire.—Yarnsizing dressing machine; self-stopping beaming machines; loom. 521
- 30 Booth, H., & Co., Preston, Lancashire.—Cotton-spinning machinery. 521
- 31 Carter, John, Halifax, Yorkshire.—Spinning frame. 521
- 31a Greenwood & Batley, Albion Works, Leeds.—Machine for tying in warps for looms. 521
- 32 Coats, J. & P., Ferguslie Thread Works, Paisley.—Spooling machine; thread-winding machine; machine for ticketing. 521

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

# GREENWOOD & BATLEY,

## ALBION WORKS, LEEDS, ENGLAND,

Machinists to the British War Department, the Council of State for India, and all the principal Foreign Governments,

EXHIBIT AT THE INTERNATIONAL EXHIBITION OF 1876,

PATENT BOOT SEWING MACHINE,  
PATENT BOLT FORGING MACHINE,  
PATENT PRINTING PRESS, and  
PATENT MACHINE FOR TIEING IN WARPS, } See Catalogue.

### MAKERS OF

Special Machinery for the manufacture of Guns and Gun Carriages, Small Arms and Ammunition of all descriptions, including Cartridges, Shot and Shell, Fuzes, Rockets, Bullets, Percussion Caps, &c.; also of Gunpowder and Powder Cask Machinery, as well as of all kinds of Machinery used in the production of War Material and Implements.

### MAKERS OF

Machinery on the latest system for Dressing, Preparing, and Spinning Silk, Silk Waste and China Grass; and of Special and General Tools for Engineering and Railway Work, and Wood-Working Machinery.

Agent for China and Japan—Mr. JAMES DAVIDSON. Shanghai.



PARIS,



1867.



## SCANLAN, JUNR., & CO.,

WALSALL, STAFFORDSHIRE, ENGLAND,

Proprietors of the Patterns and Goodwill of Messrs. Best & Co.'s PLUMBING AND ENGINEERING FOUNDRY WORK, from Birmingham (Trade Mark as above).

MANUFACTURERS OF PATENTED NOVELTIES.

IMPORTERS OF SPECIAL AMERICAN TOOLS.

Contractors for Railway, Telegraph, Colliery, & Iron Works  
Stores, Gas & Water Pipes, Apparatus, Metals.

MACHINERY INSPECTED. MANUFACTURED IRON EXPORTED.

IMPORTANT TO CAPITALISTS.

FOR SALE,

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## AUTOMATIC FIRE EXTINGUISHER & ALARM

A MOST VALUABLE INVENTION—IS ENTIRELY SELF-ACTING.

Sole Patentees { SANDERSON & PROCTOR, at the EXHIBITION (MACHINERY BUILDING);  
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Manufacturers, SHORE WORKS HUDDERSFIELD ENGLAND.

Gold Medal,

## MCKAY'S EQUILIBRIUM DRILL,

Paris, 1870.

For Boring Tube Plates, Drilling Rivet Holes, and every description of Engine Work with perfect accuracy, without skilled labour. Only requires true centre pop to guide cutters.

MENZIES & FLAGBURN,

NEWCASTLE-ON-TYNE, ENGLAND.

AMERICAN PATENT FOR SALE.



# **SAMUEL LAWSON & SONS**

## **LEEDS,**

**MAKERS OF**  
**MACHINERY FOR PREPARING AND SPINNING FLAX,**  
**TOW, HEMP, AND JUTE.**

**LOOMS and PREPARING MACHINERY for**  
**FLAX and JUTE WEAVING.**

**SPECIAL MACHINERY FOR THE MANUFACTURE OF TWINES.**

**SOLE MAKERS OF**  
**GOOD'S PATENT COMBINED HACKLING and**  
**SPREADING MACHINE,**  
**PATENT AUTOMATIC SPINNING FRAMES,**  
**And other special Machinery for the manufacture of Rope Yarns.**

---

**COUNCIL MEDAL, London, 1851.**  
**GRAND MEDAL, Paris, 1867.**

**PRIZE MEDAL, Moscow, 1873.**  
**DIPLOMA OF HONOUR, Vienna, 1873.**

---

**Corner of Belmont and Fountain Avenues,**  
**NEAR THE LAKE.**

**FRENCH RESTAURANT,**  
**LES TROIS FRÈRES PROVENCAUX.**

**The same which had such a great success in the Vienna**  
**Exhibition, in 1873.**

**CH. VERDIER,**  
**of the MAISON DORÉE, of Paris, Proprietor.**  
**Near the Lake, opposite the U. S. Government Building.**

---

## Cloth and Paper-working Machinery, Motors, Pumps.

- 35** Nussey & Leachman, Leeds.—Hydraulic cloth pressing and finishing machine. 522
- 36** Lawson, Samuel, & Sons, Hope Foundry, Leeds.—Machinery for carding, preparing, and spinning jute; cop-winding machine. 524
- 37** Fairbairn, Kennedy, & Naylor, Leeds.—Machinery for preparing and spinning jute, hemp, flax, tow, and similar fibres. Carding engine; drawing, roving, and spinning frames. 524
- 38** Marshall, T. J., & Co., Campbell Works, Kingsland.—Dandy rolls and wire cloth, for paper making, and pulp strainer. 525

**Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.**

- 39** Gimson & Coltman, Leicester.—Knitting machines; rip top and circular machines. 531
- 40** Wilson, Newton, & Co., London.—Sewing machines, their appliances and apparatus. 531
- 41** Kimball & Morton, Glasgow.—Sewing machines; machines for sewing sails and sacks over-edge. 531
- 42** Sanson, Robert Bell, London.—Spring arm endless band knife; cloth-cutting machine; parallel pressing machine for tailors' use. 531
- 44** Air Burning Co. (limited), Glasgow.—Ironing table. 534
- 45** Broadbent, Thomas, Chapel Hill, Huddersfield.—Hydro extractor, for extracting water from wool, cotton, etc. 534

**Machines and Apparatus for Type-Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.**

- 46** Beatty, Francis S., Dublin.—Lithographers' manifold transfer machines, for the reproduction of printed matter of enlarged or reduced dimensions from that of the original. 540
- 46a** Greenwood & Batley, Albion Works, Leeds.—Printing machine. 540
- 47** Lilly, John, & Co., London.—Perfecting and single cylinder printing presses. 540
- 48** Walter, John, London.—Printing press. 540
- 49** Shaw, William, London.—Logotypes and cases, shown in operation; printing press. 540

**Motors and Apparatus for the Generation and Transmission of Power.**

- 50** Green, Edward, & Son, Manchester.—Fuel economizer for heating the feed water for steam boilers. 550
- 51** Davey, Paxman, & Co., Colchester, Essex.  
a Vertical boiler and water heater. 550  
b Portable steam engine; vertical engine; steam corn dryer. 552
- 52** Galloway, W. & J., & Sons, Knott Mill Iron Works, Manchester.—Steel boilers, for use in the British section. 550

- 55** Wright, William, Vulcan Foundry, Coatbridge.—Hot water boilers for heating dwellings, conservatories, etc. 550
- 56** Moncrieff, John, North British Glass Works, Perth, Scotland.—Steam boiler water gauge glasses. 551
- 57** Wier, Marshall Arthur, London.—Pneumatic motor, water meter, hydro-gyrometer, locomotive speed indicator, pneumatic gyrometer, reciprocating counter. 551
- 57a** Holmes, Joseph E., Payton, Walter, & Taylor, Fenner B., London.—Cylinder engine; revolving steam engine and air compressor. 552
- 57b** Hurd, Frederick, & Co., Wakefield.—High-speed air compressor. 552
- 57c** Smith & Starley, Trafalgar Works, Coventry.—Electric motors. 552
- 58** Thermo-Electric Generator Co. (limited), London.—Thermo batteries worked by gas, charcoal, or coke, in nature approaching the appearance of a gas stove. 552
- 58a** Moy, Thomas, London.—Small steam engines for tramways, etc. 552
- 58b** King, F. L.—Steam engines. 552
- 59** Turner, Charles, Southampton.—Couplings for propeller shafts and other purposes. 554
- 60** Hewitt, William, Bristol.  
a Model of improved screw propellers; model of an improved principle for driving machinery. 553  
b Breech-loader gun; gun carriage. 266
- 61** Vansittart, Henrietta, Mrs., Twickenham.—Screw propeller. 554
- 62** Hicks, James Joseph, London.—Enamel water gauges for steam boilers. 555
- 63** Moncrieff, John, North British Glass Works, Perth.—Gauge glasses for indicating height of water in steam boilers. 555

**Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.**

- 63a** Pickering, Jonathan, Globe Works, Stockton-on-Tees.—Steam and water cylinder; steam pump. 560
- 64** Gwynne, John & Henry, Hammersmith Iron Works, London.—Model of compound surface-condensing engines with centrifugal pumps made to 1/4 scale. 560
- 64a** Haynes, Thomas, & Sons, London.  
a Platform pump; garden syringe. 560  
b Water bringer, for overcoming friction caused by drawing water through long lengths of hose; self-acting hose coiler. 564
- 65** Gwynne & Co., London.  
a Centrifugal pumps and engines. 560  
b Gas exhauster and engine. 561
- 66** Ellis, William Irlam, Manchester.—Blower or exhauster for air or gas. 561
- 67** Appleby Bros., London.—Steam cranes. 563
- 68** Wallace & Tucker, Belfast.—Fire annihilator. 564
- 70** Needham & Kite, Phoenix Iron Works, London.—High pressure filter press. 565

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**Railway Plant, Agricultural Machinery, Vessels.**


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71 Lawrence & Co., London.—Refrigerators; mashing machines, spargers, etc. 565

72 Dennis, T. H. P., & Co., Anchor Iron Works, Clemsford.—High pressure valves for steam, hot or cold water, or gas. 566

**Railway Plant, Rolling Stock, and Apparatus.**

73 Welch, Alfred, London.—Railway cattle wagons. 571

74 Williams, Richard Price, London.—Continuous railway crossings; switches for doing away with facing points on railways. 574

75 Brierley, Sons, & Reynolds, London.—Railway signal model of railway junction. 574

76 Seaton, William, London.—Saddle rail and permanent way construction. 574

77 Saxby & Farmer, London.  
a Models of railway switches; junction, with switches and signals. 574  
b Railway signals, and level crossing gates. 575

**Machines used in preparing Agricultural Products.**

78 Sutcliffe, James S., Bacup, Lancashire.—Middlings flour separator. 580

79 Mirlees, Tait, & Watson, Glasgow.—Machinery in motion, consisting of sugar mills, valveless engine working an air pump for a vacuum pan, and driving centrifugal machines. 581

80 Collier, Luke, Rochdale.—Confectioners' machines. 582

81 Andrew, J. E. H., Stockport.—Machines for spinning tobacco; samples of twist tobacco from Europe. 584

**Aerial, Pneumatic, and Water Transportation.**

82 Siebe & Gorman, London.—Diving apparatus for two divers; figure of diver in diving suit, with the helmet and speaking apparatus. 594

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

82a Wallace & Tucker, Belfast.—Model of turret system of life preservation, in case of shipwreck. 594

83 Cruickshank, A. B., Dundee, Scotland.—Self-acting safety cleats for boats and yachts. 594

84 Logan, John Maxwell, Cambridge.—Model of four-oared racing boat, to take to pieces for convenience in traveling. 594

85 Inman Steamship Co. (limited), Liverpool.—Full rigged model and oil painting of the steamer "City of Berlin." 594

86 Hill & Clark, London.—Boat disengaging hooks. 594

86a Bradford, William Henry, Great Saughall, near Chester.

a Model of life boats, lateen rig, life or salvage boat. 594

b Model of a ship's course indicator. 597

87 Clark, Standfield, & Co., London.—Models of floating and gridiron depositing docks. 596

88 Roby, George, Wigan.—Hydro-pneumatic and other vessels for the storage of gunpowder, etc. 596

90 Wood, John William, Harwich, Essex.—Iron self-adjusting shothole, rivet hole, and leak stopper. 597

91 Martin, Claude, London.—Self-canting anchors; chain cables; model of H. M.'s turret ram "Alexandra." 597

92 Gümpel, Charles Godfrey, London.—Ship's rudder. 597

92a Cooke, Joseph, & Co., Midland Davy Lamp Works, Birmingham.—Miners' safety lamps. 120

92b Bainbridge, Emerson, Duke of Norfolk's Collieries, Sheffield.—Miners' safety lamp. 120

(N.B.—Certain exhibits of machinery from Great Britain are installed in the Main Building, and catalogued in Part I.

## CANADA.

(Central Aisle, Columns 1 to 7.)

## Metal, Wood, Stone, Cloth, Clothing-working Machinery.

**Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.**

- 1 Hannahan, Joseph, Ottawa, Ont.—Rock-drilling bits. 500
- 2 Symonds, W. S., & Co., Halifax, N.S.—Gold quartz crushing machine. 505
- 4 Freeland, R., Toronto, Ont.—Soap-making machinery. 508

**Machines and Tools for Working Metal, Wood, and Stone.**

- 9 Kennedy, W., & Son, Owen Sound, Ont.—Facing and jointing planer. 510
- 11 Machine Co., Bowmanville, Ont.
  - a Turning lathe for wood, moulding machine, planing and notching machine. 510
  - b Metal turning lathe, planing machine. 515
- 14 Waterous Engine Works Co., Brantford, Ontario, Canada.—Twenty-horse power portable saw mill: capacity, six to ten thousand feet per day; shipping weight, eight tons. A strictly portable saw mill, practical, efficient, economical, and durable; obtained first medal and diploma at Exposition Santiago Chili, South America, September, 1875. 510
- 15 Mitchell & Teeple, Harriston, Ont.—Wood-sawing machine. 510
- 18 McKecknie & Bertram, Dundas, Ont.—Wood-moulding machine. 510
- 20 Harris, James, & Co., St. John, N. B.
  - a Shingle machine. 510
  - b Register grates. 513
- 21 Lordly, Howe, & Co., St. John, N. B.—Turning lathe. 510
- 22 Nelson, Thomas, & Co., Dundas, Ont.—Cast iron water pipe. 513
- 23 Campbell, George, Toronto, Ont.—Portable saw forges. 514
- 24 Mitchell, R., & Co., Montreal, Q.—Lead tube bending machine. 515
- 26 McKecknie & Bertrand, Dundas, Ont.—Iron turning lathes, radial drill, slotting and iron shaping machines. 515
- 27 Tool Co., Hamilton, Ont.—Engine lathe, bolt cutter, drilling machine, portable radial drill, steam hammer. 515
- 29 Stephenson, M., Stratford, Ont.—Hand-drilling machine, for drilling both the fish holes in railroad iron at the same time in their exact position and without measuring, effecting a great saving in labor. 515
- 30 Smark, J., Brockville, Ont.—Drilling machines. 515

- 31 Fisher, J., & Co., Kincardine, Ont.—Clipping boiler plate machine. 515
- 32 Mitchell, R., & Co., Montreal, Q.—Lead tube bending machine. 515
- 33 Dunn, P., Cote St. Paul, Q.—Wire nail machine. 515
- 34 McFarlane, Thum, & Co., Fredericton, N. B.—Vertical power drill. 515
- 35 Coore, E. R. N., & Co., St. John, N. B.—Nail machine. 515
- 37 Bulmer & Sheppard, Montreal, Q.—Brick machine. 517
- 37a Tiffany, Geo. S., London, Ont.—Tile and brick machine. 517

**Machines and Implements of Spinning, Weaving, Felting, and Paper Making.**

- 38 Powers, S. H., Woodstock, N. B.—Self-acting hand loom. 521
- 39 Becker, A., Montreal, Q.—Sample of card clothing. 522
- 40 Boeck, Chs., Toronto, Ont.—Combining machines for brush makers. 524

**Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.**

- 44 Wilkie & Osborne, Guelph, Ont.—Sewing machines. 531
- 45 Wanser & Co., Hamilton, Ont.—Sewing machines. 531
- 48 St. Amand, O., Quebec, Q.—Sewing machine. 531
- 49 Lawlor, J. D., Montreal, Q.—Sewing machines. 531
- 51 Williams, C. W., Manufacturing Co., Montreal, Q.—Sewing machines. 531
- 52 Harris, Th., Montreal, Q.—Sewing machine needle sharpener. 531
- 55 Popham, James & Ebenezer, Montreal, Ca.—Popham steam peg breaker—now being patented both in Canada and the United States—will cut off and entirely remove the peg-ends that have so long troubled manufacturers and dealers in boots and shoes, and leaves the inside of the sole as free from peg-points and nails as the outside. Attached to the machine will be found samples of the work done, a close inspection of which will conclusively demonstrate the reality of the improvement. 533
- 56 Clarke, R., St. John, N. B.—Lasts. 533

## Engines, Boilers, Pumps, Railway Plant and Appliances.

**Motors and Apparatus for the Generation and Transmission of Power.**

- 62 Tandy, G. J., Kingston, Ont.—Steam boiler. 550
- 63 McKay, Adam, Dartmouth, N. S.—Model steam boiler. 550
- 64 Kennedy, Wm., & Sons, Owen Sound, Ont.—Water-wheel. 551
- 65 Tuerk, F. W., Berlin, Ont.—Working model water-wheel. 551
- 66 Barber & Harris, Mesford, Ont.—Water-wheel. 551
- 67 Goldie & McCulloch, Galt, Ont.  
a Turbine water-wheel. 551  
b Steam engine. 552
- 68 Harris, J., & Co., St. John, N. B.—Water-wheel. 551
- 70 Fleck, A., Ottawa, Ont.—Oscillating steam engine. 552
- 71 Thomson Williams' Manufacturing Co., Stratford, Ont.—Stationary engine. 552
- 72 Martin, Chs., Belleville, Ont.—Vertical steam engine. 552
- 75 Piper, Thos., Hamilton, Ont.—Model four-cylinder engine. 552
- 77 Brush, Geo., Eagle Foundry, Montreal, Ca.—Portable steam hoisting engine, for use on wharves, in mines, quarries, coal yards, etc., and erection of buildings; is very compact and easily handled; all levers and working parts being within easy reach of the driver, without moving from his post. 552
- 83 Fleming, Geo., & Sons, St. John, N. B.—Oscillating engine. 552
- 85 Smith, J. G., Dartmouth, N. S.—Miniature steam engine. 552
- 86 Dixon, Smith, & Co., Toronto, Ont.—Belting. 553
- 87 Sandall, John, Moncton, N. B.—Valve link motion. 553
- 91 McKeough, J. W., Chatham, Ont.—Brass dome. 555
- 92 Morrison, James, Toronto, Ont.—Steam, vacuum, hydraulic gauges. 555
- 93 Piper, Thos., Hamilton, Ont.—Steam boiler detector gauge. 555
- 94 Myers, S., & Son, St. John, N. B.—Governor. 555

**Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.**

- 95 Patrick, Rob., Galt, Ont.—Rotary pump. 560
- 96 Cox, H. W., Peterborough, Ont.—Rotary force pumps. 560
- 97 Oakville Manufacturing Co., Oakville, Ont.—John Dayer, Andrew J. Bounsall, and George C. Bounsall, foundry and iron pump manufactory; force, well, and cistern pumps. 560
- 100 Bowes, E., & Son, Stratford, Ont.—Force pumps. 560
- 101 Webster, Stephen, St. Catharines, Ont.—Oil-storing tank. 560
- 102 Smart, J., Brockville, Ont.  
a Cistern, well, and force pump. 560  
b Jack screws. 563

- 105 Barnes, C. C., St. John, N. B.—Rotary pump. 560
- 106 Jones, C. C., Fredericton, N. B.—Barrel pump. 560
- 107 Wilson, Clarke, & Co., Yarmouth, N. S.—Ship pump. 560
- 111 Small & Fisher, Woodstock, N. B.—Barrel lifter. 563
- 112 Dailey, M. E., Ottawa, Ont.—Telescope trestle. 563
- 113 Ronald, John D., Chatham, Ont.—Steam fire engine, hose cart and hose. 564
- 117 Murphy & Harle, Montreal, Q.—Pneumatic fire extinguisher. 564
- 118 Bustin, Robert, St. John, N. B.—Fire escape. 564
- 119 Smith, H. F., Toronto, Ont.—Soda water fountain. 565
- 120 Sells, H., Vienna, Ont.—Cider mill and press. 565
- 121 Brazil, P., Barrie, Ont.—Cider mill and press. 565
- 122 Date, John, Montreal, Q.—Diving apparatus. 567
- 123 Pitte, D. H., Halifax, N. S.—Submarine armor. 567

**Railway Plant, Rolling Stock, and Apparatus.**

- 124 Meyer, F. W. A., Montreal, Q.—Drawing of engine and tender. 570
- 127 Knott, Kennard, Petersville, L., Ont.—Cattle car and refrigerating tender. 571
- 128 Brydon, Robert, Newberg, Ont.  
a Grain car. 571  
b Grain car door fastener. 573
- 129 Muir, Thomas, London, Ont.—Rail joint protector and car-coupler. 572
- 130 McNabb, M.—Car coupler. 572
- 131 Christolm, R. K., Oakville, Ont.—Car coupler. 572
- 132 Chisholm, R. N., Oakville, Ont.—Car coupling. 572
- 132a Griffin, J. K., Toronto, Ont.—Model of car coupler. 572
- 133 Richard, E. O., & Bro., St. Roch, Q.—Car brakes and coupling. 572
- 134 Car Wheel Co., Toronto, Ont.—Car wheels and axles. 573
- 136 Harris, J., & Co., St. John, N. B.—Railroad car wheels and axles. 573
- 136a Osborne, Henry, St. Andrews, Q.—Model of car axle. 573
- 137 Von Staden, W. G., Strathroy, Ont.—Bent posts and rafters for railroad cars. 574
- 140 Nunn, W. C., Belleville, Ont.—Railway telegraph signals, with revolving and fixed lamps, and electric gong. 575
- 143 Miller, Flanges Co., Fredericton, N. B.—Locomotive flanges. 576
- 144 Ramsay, R. H., Cobourg, Ont.—Ramsey's car truck shifting apparatus, patented March 14, 1876. The power required to run a car on the level track is sufficient to remove the trucks, and re-



## Agricultural Machinery, Boats, Vessels.

- place them again. Expense reduced from twelve thousand dollars to one hundred. Correspondence with railroad companies invited. 576
- 147 Colford, Henry, Halifax, N. S.—Spark arresters for house, factory, and locomotive. 576
- Machines used in Preparing Agricultural Products.**
- 148 Rochelle, L. N. & A. H., St. Anselme, Ont.—Magnetic separator and dryer. 580
- 148a Wilson, J. P., Montreal, Q.—Vacuum pan. 581
- 149 Copping, G. H., Toronto, Ont.—Lozenge machine. 582
- 151 Scales, Rob., Toronto, Ont.—Evaporator and tobacco lump machine. 584
- 152 Adams, J. L., Montreal, Q.—Tobacco cutter. 584
- 153 Marengo, J. & A., Montreal, Q.—Cigarette machine. 584
- Aerial, Pneumatic, and Water Transportation.**
- 155 Herald, D., Gore's Landing, Ont.—Canoes. 594
- 156 English, W., Peterborough, Ont.—Hunting canoe. 594
- 159 Power, W., & Co., Kingston, Ont.—Ship models. 594
- 160 Lapierre, Zephirin, Isle of Orleans, Q.—Sailing boat rigged, rowing boat, winter canoe. 594
- 163 Baldwin, P., St. Roch, Quebec, Q.—Ship model. 594
- 164 Dunn & Samson, Levis, Q.—Ship models. 594
- 165 Rose, N., Levis, Q.—Ship models. 594
- 166 Dinning, H., Quebec, Q.—Ship models. 594
- 167 Marquis, F. H., Levis, Q.—Ship models. 594
- 168 Auger, E., Quebec, Q.—Ship models. 594
- 169 Cotman, W., Quebec, Q.—Ship models. 594
- 170 Samson & Co., Quebec, Q.—Ship models. 594
- 171 Gingras, E., Quebec, Q.—Ship models. 594
- 172 Oliver, J., Quebec, Q.—Ship models. 594
- 173 Oliver, F. H., Quebec, Q.—Ship models. 594
- 174 Quebec Advisory Board, Quebec, Q.—Ship models. 594
- 175 Sewell, E. W., Levis, Q.—  
a Winter canoe, drawings of safety ship, ship and yacht models. 594  
b Drawing of steamship for Canadian trade. 595
- 176 Robitaille, Th., Quebec, Q.—Complete cod-fishing boat; "Micmac" bark canoe. 594
- 177 Charland, W., Levis, Q.—Ship model. 594
- 178 Grenier, Fra., Isle of Orleans, Q.—Pilot boat. 594
- 179 Girard, A., Murray Bay, Q.—Poplar canoe. 594
- 182 Ross, Elizab, Portland, N. B.—Single scull racing boat, spoon-set oars, set single scull oars, set oars, lie boat model. 594
- 183 Barrill, Jos., Yarmouth, N. S.—Ship model, improved gear for reefing sail. 594
- 184 Moreley, E., Dartmouth, N. S.—Ship models. 594
- 185 Carmount, Wm.—Ship model. 594
- 186 Dailey, M. E., Ottawa, Ont.—Model ocean ship. 595
- 187 Merritt, Abel, Chatham, Ont.—Propeller boat. 595
- 188 Richelieu & Ontario Navigation Co., Montreal, Q.—Steamboat models. 595
- 189 Wildgoose, F. H., Montreal, Q.—Steamboat model. 595
- 190 Meyer, F. W. A., Montreal, Q.—Drawing longitudinal section steamboat. 595
- 192 Beutey, H., Quebec, Q.—Dragging or grappling apparatus. 596
- 193 Carroll, S., Widden, Ont.—Marine compass, automatic ship trimmer. 597
- 194 Pitts, D. H., Halifax, Ont.—Ship windlass and cable brake. 597
- 195 Mosler, Geo. J., Maitland Island, N. B.—Ship wheel. 597
- 196 Harris, James, & Co., St. John, N. B.—Capstan. 597
- 197 Pitts, D. H., Halifax, N. S.—Mast hoop clamp, cable brake, metal jib hank. 597
- 198 Convrette & Frigon, Montreal, Q.—Stern of ship (model). 597
- 198a Harris, James, & Co., St. John, N. B.—Ships' iron knees, straps. 284
- 198b Coldbrook Rolling Mills Co., St. John, N. B.—Cut and clinch nails, spikes and knees. 284
- 198c Weddleton, J. B., Yarmouth, Ont.—Head earrings for ships. 284

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## FRANCE.

*(North of Central Aisle, Columns 1 to 7.)***Metal, Wood, Stone, Cloth-working Machinery, Motors.****Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.**

- 1 Fleury, Jules Martin, Paris.—Grinding mill. 505
- 2 David Bros., Charleville (Ardennes).—Portable forges. 506
- 3 Perret, Michel, Paris.—Apparatus for combustion. 506
- 4 Goyard, F., Paris.—Crucibles and furnaces. 506
- 6 Enfer, Ernest, Paris.—Portable forges; forges for the laboratory; gas pressure bellows apparatus; bellows. 506
- 7 Chenaillier, Paris.—Universal evaporator. 506
- 8 Faure & Kessler, Clermont-Ferrand.—Apparatus for the concentration of sulphuric acid. 508
- 9 Deamoutis, Quenneusen, & Le Brun, Paris.—Platina apparatus. 508
- 10 Pelouze, E., & Audouin P., Paris.—Condenser for gas works. 509
- 11 Lascole, A., Paris.—Gas apparatus. 509

**Machines and Tools for Working Metal, Wood, and Stone.**

- 12 Arbey, F., Paris.—Wood-working machinery. 510
- 13 Branche, H., Paris.—Machines and tools. 510
- 14 Rous, Edmond, Paris.—Tools of precision. 510
- 15 Dugoujon, sr., Paris.—Saws. 510
- 17 Limet-Laparelle & Co., Paris.—Files. 515
- 18 La Quintinie, A., & Co., Paris.—Machines and tools for goldsmiths; designs of machines for soap, confectionery, and matches. 515
- 20 Durand, F., & Marais, Paris.—Brick machines. 517

**Machines and Implements of Spinning, Weaving, Felting, and Paper Making.**

- 21 Guinet, Ant., & Co., Lyons.—Silk-weaving looms. 520
- 22 Richard, J. S., Paris.—Machines and looms for textiles. 521
- 23 Pierron & Dehaitre, Paris.—Weaving machine. 522

- 24 Couture, Paris.—Breaking machines for textile fabrics. 523
- 25 Maigrou, F. A., Paris.—Rope machine. 524
- 26 Deny, Louis, Paris.—Open copper cylinder and refiner for paper manufacture. 525
- 27 Thomine, F., Paris.—Machine for the manufacture of fishing nets. 527

**Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.**

- 28 Legat, D., Paris.—Machine for sewing straw hats. 531
- 29 Cornely, E., Paris.—Embroidering machines. 531

**Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.**

- 29a Alauzet, Paris.—Printing machines. 540
- 30 Coblenz, Paris.—Electrotypes. 541
- 31 Derriey, Ch., Paris.—Typography, engraving, and electrotypes. 541
- 31b Derriey, Ch., Paris.—Printing type. 541
- 32 Tucker, Paris.—Types and cuts. 542
- 33 Lecerf, L., Paris.—Printing materials. 543
- 34 Vital, A., Paris.—Rollers for lithographic presses. 543

**Motors, and Apparatus for the Generation and Transmission of Power.**

- 35 Leroy, François, Marseilles.—Models of marine boilers. 550
- 36 Fontaine, Hippolyte, Paris.—Steam engines. 552
- 37 Electro-Magnetic Machine Manufacturing Co., Paris.—Gas machines, galvano-plastic machine, machine to transmit power. 552
- 38 Mignon & Rouart, Paris.—Noiseless gas motors. 552
- 39 Chauveau, Paris.—Steam engines. 552
- 40 Breguet, Paris.—Electro-magnetic machines. 552
- 41 Rous, Edmond, Paris.—Hermetic clasps for oil cups, etc. 553

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## Motors, Hydraulic Apparatus, Railway Plant, Agricultural Machinery.

- 42 Welby, Rouen.—Belting. 553  
 43 Jacob, Ch. Moise, Paris.—Oiling cushions. 553  
 44 Domange, Lemierre, & Co., Paris.—Belting. 553  
 45 Perreaux, L. G., Paris.—Screw propeller. 554  
 45a Bourdia, Paris.—Motor for sewing machines. 554  
 46 Dechamp, C., Lyons.—Safety boiler apparatus. 555  
 47 Cazaubon, Dominique, Paris.—Cocks for steam, water, and gas pumps, and water closets. 555  
 48 Lion & Guichard, Paris.—Metallic manometer. 555  
 49 Macabies, Paris.—Automatic feeder. 555  
 50 Rigoliot, Paris.—Cocks for water, steam, and gas. 555  
 50a Serrin, Paris.—Regulator for electric light. 555  
 51 Cuau, Paris.—Boiler injector. 555  
 52 Coux des Roseaux, Asnieres, near Paris.—Automatic oil cups for steam machines; fire-proof insulator for steam pipes. 555

## Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

- 53 Neut, L., & Dumont, L., Paris.—Centrifugal pumps. 560  
 54 Garlaudat, Paris.—Refrigerating apparatus. 562  
 55 Esfer, A., jr., Paris.—Portable forges and bellows. 562  
 56 David Bros., Charleville (Ardennes).—Portable forges. 562  
 57 Esfer, Ernest, Paris.—Portable forges, bellows, gas apparatus. 562  
 58 Morane, jr., Paris.—Hydraulic press for candle manufacture. 563  
 59 Chrétien, J., Paris.—Automatic apparatus for unloading coal. 563  
 60 Rous, Edmond, Paris.—Pulleys and tackles. 563  
 61 Mégy, Echeverria, & Basan, Paris.—Elevators, regulators, etc. 563  
 62 Gausart, Epernay (Marne).—Machines for charging wines with gas. 564  
 63 Constant, Port-a-Binson (Marne).—Wine press. 565  
 64 Appert-Mandart, Reims (Marne).—Hooks and clasps for champagne. 565  
 65 Lejeune, Epernay (Marne).—Machine for charging wines with gas. 565  
 66 Renard, Epernay (Marne).—Wires and strings for champagne. 565  
 67 Paillet & Co., Epernay (Marne).—Corks. 565  
 68 Cazaubon, D., Paris.—Soda water machines; siphons. 565  
 69 Freal, Epernay (Marne).—Bottling machines. 565  
 70 Gervais, E., Bordeaux.—Bottling machines. 565  
 71 Guéret Bros., Paris.—Soda water machine. 565

- 72 Logette, Ay (Marne).—Clasps for bottles and machines for applying. 565  
 73 Maldine, H., Paris.—Soda water machines, siphons. 565  
 74 Maurice, Widow, & Guenin, Epernay (Marne).—Bottling machines. 565  
 75 Michelot, jr., Epernay (Marne).—Stands and cases for wines. 565  
 76 Theessier, Fevre, Paris.—Table apparatus for Seltzer water. 565  
 77 Tricourt, A., Reims (Marne).—Wine-making machines. 565  
 78 Mestre, A. de, Bordeaux.—Bottling machines. 565  
 79 Mondoliot, A., Paris.—Soda water machine, siphons. 565  
 80 Cicile-Larbre, Reims (Marne).—Bottle cleaners. 565  
 81 Durafort, Paris.—Soda water machine. 565  
 82 Fiasse-Thirion, & Co., Reims.—Bottling machine. 565  
 83 Rigoliot, Paris.—Cocks for water, steam, and gas. 566  
 84 Perreaux, L. G., Paris.—Rubber valves. 566  
 85 Giffard & Berger, Paris.—Ice machines. 568  
 86 Carré, E., Paris.—Ice machine. 568

## Railway Plant, Rolling Stock, and Apparatus.

- 87 Edoux, Leon, Paris.—Special system for mountain railroads. 570  
 88 Joliot, S., Vincennes.—Car brakes. 572  
 89 Le Bas, Paris.—Automatic clutch. 572  
 90 Arbel Lucien, Rive-de-Gier (Loire).—Forged iron wheels for locomotives and cars. 573  
 91 Brunon Bros., Rive-de-Gier (Loire).—Wheels manufactured by hydraulic pressure. 573

## Machines used in Preparing Agricultural Products.

- 92 Aubin & Baron, Paris.—Bolting mill. 580  
 93 Durrachmidt, Lyons.—Emery millstones. 580  
 93a Deplanque, Son, sr., Maison-Alfont (Seine).—Emery millstones. 580  
 94 Beyer Bros., Paris.—Soap and chocolate machines. 582  
 95 Hermann, G., Paris.—Chocolate machines. 582  
 96 Durvie, Ivry-la-Bataille (Eure).—Mechanic kneading machine. 582  
 97 Beyer Bros., Paris.—Soap and chocolate machines. 585

## Aerial, Pneumatic, and Water Transportation.

- 98 General Transatlantic Co., Paris.—Model of the steamship "Pereire." 595

## GERMANY.

*(South of Central Aisle, Columns 1 to 7, and Pump Annex.)*

## Metal, Wood, Stone, Cloth, Paper-working Machinery, Pumps, etc.

**Machines, Tools, etc., of Mining, Chemistry, etc.**

- 1 Sparre, Julius von, Dortmund.—  
Model of a drill. 500
- 2 Wüschmann, Reinh., Leipzig.—  
Candle-making machine. 508

**Machines and Tools for Working Metal, Wood, and Stone.**

- 3 Kahlke & Detlefsen, Hamburg.—  
Cutting machine and apparatus for cleaning boiler tubes. 515
- 3a Schäffer & Budenberg, Buckau.—  
Polishing machines. 516
- 4 Schlickeysen, C., Berlin.—Brick, turf, cement, and clay machines. 517
- 5 Loeff, Paul, Berlin.—Model of a kiln for bricks, etc. 517

**Machines and Implements of Spinning, Weaving, etc.**

- 6 Windmüller & Meynen, Zwischenahn, Oldenburg.—Wooden spools. 520
- 8 Grothe, H., Berlin.—Models. 521
- 9 Bodemer, Georg, Zechopau.—Apparatus for spinning. 521
- 10 Beuthner Bros., Berlin.—Carders. 522
- 11 Mechanical Card Factory, Mittweida.—Cards 522

**Machines, etc., used in Sewing, Making Clothing, etc.**

- 12 Huhn, Heinr., & Co., Aix-la-Chapelle.—Needles. 530
- 13 Lammertz, Leo., Aix-la-Chapelle.—Needles. 530
- 14 Bellé, R., Aix-la-Chapelle.—Needles. 530
- 15 Pastor, Ph. H., Sons, Burtscheid, near Aix-la-Chapelle.—Needles. 530
- 16 Zimmermann, Jos., Aix-la-Chapelle.—Needles. 530
- 17 German Sewing Machine Factory, Frankfurt-on-Main.—Sewing machines. 531
- 18 Müller, Cl., Dresden.—Sewing machines. 531
- 19 Kiehle, R., Leipzig.—Sewing machines. 531
- 20 Hamburg-American Sewing Machine Factory Joint Stock Co.—Sewing machines, etc. 531
- 21 Schmalz, F. G., Altenburg.—Machines for making gloves. 532
- 22 Hemmer, L. Ph., Aix-la-Chapelle.—Fulling and washing machine. 534
- 23 Dausch, J. G., Munich.—Instruments and apparatus for watchmakers 535

**Machines for Printing, Making Books, Paper Working, etc.**

- 26 Traiser, Carl, Darmstadt.—Ruling machine. 541
- 27 Lotz, Ferd., Offenbach-on-Main.—Lithographic machinery. 540

**Motors, Power Generators, etc.**

- 29 Schilling, F. A., Bremerhaven.—Steam engines. 559
- 30 Gas Motor Factory, Deutz.—Gas motors. 559
- 31 Blancke, C. W. J., & Co., Merseburg.—Pyrometer, steam gauges, vacuum meters, etc. 555
- 32 Bodemer, Georg, Zechopau, near Chemnitz.—Regulators. 555
- 33 Schäffer & Budenberg, Buckau, near Magdeburg.—Steam gauges, pyrometers, lubricators, etc. 555
- 34 Blanke, Em. A. R., Frankfurt-on-Oder.—Steam packing, etc. 555
- 35 Gehreckens, C. Otto, Hamburg.—Stuffing boxes, steam packing. 555
- 36 Wertheim, Louis, Bornheim, near Frankfurt-on-Main.—Steam packing 555

**Hydraulic and Pneumatic Apparatus**

- 37 Alléoud, Emanuel, Metz.  
a Siphon pumps. 560  
b Mechanical lever. 560
- 38 Weyhe, Wilh., Bremen.—Rotary pumps. 560
- 39 Royal Saxon Fire Extinguisher Co., Leipzig.—Fire extinguishing apparatus. 564
- 40 Schultz, Ernst, Aschaffenburg.—Atmospheric apparatus for firemen, miners, etc. 564

**Railway Plant, Rolling Stock, etc.**

- 42 Glöckner Bros., Tschiradorf, near Halbau.—Blocks for brakes. 579
- 43 Camozzi & Schläpfer, Frankfurt-on-Main.—Railway switch. 574
- 43a Schäffer & Budenberg, Buckau.—Spark catchers. 574

**Machines used in Preparing Agricultural Products.**

- 43b Israel Bros., Dresden.—Mill and grind stones. 580
- 43c Osenbrück & Co., Hemmingen, near Bremen.—Cigar moulds. 584

**Aerial, Pneumatic, and Water Transportation.**

- 44 Dücker, Baron F. F. von, Bückeburg.—Drawing of a wire-rope railway. 590
- 46 Hamburg-American Steamship Co., Hamburg.—Model of a mail steamship. 595

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 17-25.

## Ores, Metallurgical Products, Weapons, Railway Plant.

## Minerals, Ores, Stone, Mining Products.

7 Krupp, Fried., Essen. — Ores and raw products. 100

## Metallurgical Products.

8 Krupp, Fried., Essen. — Samples of fractured iron and steel. 111

## Weapons, etc.

49 Krupp, Fried., Essen. — Cannon and shot. 267

## Railway Plant, Rolling Stock, etc.

50 Krupp, Fried., Essen. — Axles, wheels, pistons, springs, etc. 573

## AUSTRIA.

(South of South Aisle, Columns 1 to 5.)

## Mining, Weaving, Agricultural Machinery, Motors.

## Machines, Tools, etc., of Mining, Chemistry, etc.

Rosenegger, Josef, Oberalm, near Hallein, Salzburg. — Model of a glass-melting furnace, cylinder furnace. 506

## Machines and Implements of Spinning, Weaving, etc.

Schram, Willibald, Vienna. — Jacquard looms. 521

Surber, J. Jacques, Vienna. — Weavers' reeds and heddles. 527

## Motors, Power Generators, etc.

5 Hock & Co., Julius, Vienna. — Petroleum motor with pump. 550

6 Popper, Joseph & David, Vienna. — Patent boiler incrustation preserver, boiler fittings. 550

## Railway Plant, Rolling Stock, etc.

7 Tagleicht, Karl, Vienna. — Locomotive spark catcher and flue. 576

## Machinery used in Preparing Agricultural Products.

8 Vojtěchovský & Resnick, Prague. — Machines for candy production. 582

## SWITZERLAND.

(Section 1, Pump Annex.)

## Railway Appliances.

## Motors, Power Generators, etc.

Bulzer Bros., Winterthur, Canton Zurich. — Model of a new system of reversing gear for valve engines. (Pump annex.) 555

Pictet, Raoul, & Co., Geneva. — Machine for producing ice with the aid of anhydrous sulphurous acid. 568

For class of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## Railway Plant, Rolling Stock, etc.

9 Swiss Manufacturing Co., Neuhausen, near Schaffhausen. — Model of an apparatus for heating railway carriages. (Pump annex.) 571

Machines pertaining to watchmaking are exhibited in Swiss section, Main Building, and catalogued in that volume.

# BELGIUM.

(North of North Aisle, Columns 7 to 18.)

## Metal, Cloth, Paper-working Machinery, Motors.

### Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

- 1 Dubois, Wm. & François Joseph, Seraing, near Liège.—Drilling machine for mines, tunnels, etc. 500
- 2 Chaudron, Joseph, Brussels.—Apparatus for boring and tubing mining shafts. 501
- 3 Libotte, Nicholas, Gilly, near Charleroi.—Cages with system of parachute. 502
- 4 Muller & Co., Clermont, near Liège.—Safety fuse for miners. 502
- 5 Souheur, Arnold, Seraing, near Liège.—Safety lamps for coal mines. 502
- 6 Van Haecht, Emile, Haeren, near Brussels.—Models of fat-rendering works, with samples of stearine and oleine. 508

### Machines and Tools for Working Metal, Wood, and Stone.

- 7 De Tombay, Auguste, Marcinelle, near Charleroi.
  - a Model of a trip-hammer. 514
  - b Model of steam shears. 515
- 8 Jullien & Jennar, Bomerecé, near Charleroi.—Tuyere and axle. 514
- 9 Nicaise, Ch., & Co., and Gobert, Aug., La Louvière.—Machinery for making bolts. 516

### Machines and Implements of Spinning, Weaving, and Paper Making.

- 10 Bède & Co., Verviers.—Wool cleaning machine. 522
- 11 Delrez, Felix, Verviers.—Cards. 522
- 12 Dethiou, Gilles, & Co., Verviers.—Cards. 522
- 13 Horstmanns Bros., Liège.—Cards. 522
- 14 Martin, Célestin, Verviers.—Looms, mechanical winder, cards. 522
- 15 Martin, Th. J., Pisseroule-Dison, near Verviers.—Cards. 522

### Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

- 16 Turner, B. B., & Co., Brussels.—a Festooning and embroidering machines. 530
- b Sewing machines for gloves, straw hats, buttonholes, etc. 531
- 17 Joint Stock Society for the Manufacture of Machines and Tools of Precision, Saint Josse-ten-Noode.—Sewing and knitting machines. 532

### Machines and Apparatus for Typesetting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.

- 18 Derckx-Schlopfer, I. F., Anderlecht, near Brussels.—Wooden printing types. 542

### Motors, Power Generators, etc.

- 19 Van den Kerchove, P., Ghent.—Corliss and Rider engines. 552
- 20 Dolne, L., & Co., Verviers.—Belting. 553
- 21 Horstmanns Bros., Liège.—Belting. 553
- 22 Versé-Spelmanns, Brichot, Ant., & Co., Brussels.—Belting. 553
- 23 Dervaux, Alfred, Brussels.—Feeding apparatus for boilers. 555

### Hydraulic and Pneumatic Apparatus.

- 24 Moreau, Léon, Brussels.—Rotary pumps. 560
- 24a Banolas, R., & Co.—Fire extinguishers. 564

### Railway Plant, Rolling Stock, etc.

- 25 Durieux & Co., Louvain.—Wheels for cars, carriages, etc. 573
- 26 Mabille, Valère, Mariemont.—Railway plant. 573
- 27 Legrand, Achille, Hyon, near Mons.—Sleepers and cushions for mining railways. 573
- 28 Léonard, F. L. J., Fayt, near Senefelt.—Railway brake, signals, and gates. 575

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## NETHERLANDS.

[The Machinery Exhibit of the Netherlands is installed in the Main Building, and catalogued in Part I.]

## SWEDEN.

(North of North Aisle, Columns 7 to 16.)

## Stone, Metal, Wood, Cloth, Paper-working Machines, Motors.

## Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

- 1 Nilson, G., Eskilstuna.—Jacks. 503
- 1a Wiklund, W., Stockholm.—Centrifugal pump. 504
- 2 Alsing, J. R., Stockholm.—Model of cylinder for crushing hard materials. 505
- 6 Soderqvist, R., Goteborg.—Gas apparatus. 509

## Machines and Tools for Working Metal, Wood, and Stone.

- 7 Bergström, J. W., Stockholm.—Screw-cutting machine. 510
- 8 Bolinders, J. & C. G., Machine Manufacturing Stock Co., Stockholm. 510
- a Sawing machines. 510
- b Machines for making metal cartridges; emery wheels. 515
- 9 Von Essen, H. H., Baron, Tidaholm.—Iron for turning veneer. 510
- 10 Stridsberg & Björk, Thorstrålla.—Blades for frame, circular, timber, wood, and pit saws; machine knives, trowels, ship scrapers, plane irons, etc. 510
- 11 Fagersta Manufacturing Co., Westmanfors.—Saw blades. 510
- 12 Sandvikens Iron Works (limited), Sandviken.—Piston rod for steam hammer. 514
- 14 Brehmer, E. F. A., Stockholm.—Drilling machine. 515
- 15 Köping Mechanical Works Co. (limited), Köping.—Turning machine. 515
- 15a Samuelson, S. H., Foakefors, Rada.—Machine for making hollow peat bricks. 517

## Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

- 16 Hedlund, Joh., Eskilstuna.—Sewing machines. 531
- 17 Husquarna Arms Manufacturing Co. (limited), Jönköping.—Sewing machines. 533

## Machines for Printing, Making Books, Paper Working, etc.

- 19 Brehmer, E. F. A., Stockholm. 542
- a Paging and ticket counting machines, date stamps, etc. 542
- b Paper-cutting machine. 546

## Motors, Power Generators, etc.

- 20 Atterberg, A. J., Hagforsen, Rada.—a Drawings of turbines. 551
- b Drawing of blast engine. 552
- 21 Wenström, W., Örebro.—Drawing of a turbine. 551
- 22 Kristinehamn Machine Manufacturing Co., Kristinehamn.—Marine steam engine, tank engine. 552
- 24 Köping Mechanical Works (limited), Köping.—Cast iron cylinders for a sixty-horse power propeller steam engine. 552
- 27 Motala Iron & Steel Co., Motala.—Compound marine engine. 552
- 27a Runqvist, C. R., Stockholm.—Oscillating steam engine governors. 555
- 28 Kockum Machine Manufacturing Co. (limited), Malmö.—Steam engines. 552
- 29 Sandvikens Iron Works Co. (limited), Sandviken.—Axles for propellers. 553

## Motors, Railway Plant, Models of Vessels.

## Hydraulic and Pneumatic Apparatus.

- 29<sup>a</sup> Wiklund, W., Stockholm.—Centrifugal pump. 560  
 31 Atterberg, A. J., Hagforsen, Rada.—Drawing of blowing engine. 562

## Railway Plant, Rolling Stock, etc.

- 34 Bjorkman, C. R., Kristinehamn.—Drawing of a narrow-gauge locomotive. 570  
 34<sup>a</sup> Kristinehamn Machine Manufacturing Co. (limited), Kristinehamn.  
   <sup>a</sup> Locomotive. 570  
   <sup>b</sup> Railway car wheels. 573  
 37 Sandvikens Iron Works Co. (limited), Sandviken.—Railway wheels and axles. 573  
 38 Adelskold, C., Stockholm.—Model of an axle box for railway cars. 573  
 39 Arboga Foundry & Machine Manufacturing Co., Arboga.—Railway wheels, tires and axles. 573

- 41 Ekman, Carl, Finspang.—Railway wheels. 573

- 42 Fagersta Iron & Steel Works, Westanfors.—Railway axles and springs. 573

- 43 Köpings Machine Manufacturing Co. (limited), Koping.—Axles. 573

- 45 Ankaratums Works, Ankararum.—Railway switches. 574

- 46 Ostrand, Herriman, Helsingborg.—Drawing of a railway switch. 574

## Aerial, Pneumatic, and Water Transportation.

- 47 Lesjöfors Iron & Steel Co. (limited), Langbanshyttan.—Wire cables. 591

- 49 Royal Swedish Commission.—Models of fishing boats. 594

- 51 Kockum Machine Manufacturing Co., Malmo.—Models of steamers, and torpedo boat. 594

## SPAIN.

[Machinery Hall (Section F. 1).]

## Motors and Apparatus for the Generation and Transmission of Power.

- 1 Cases, Valero, Director of "La Primitiva," Madrid. Semi-portable steam-engine. 552

## Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

- 2 Fando, Acha y Garcia, Sevilla.—Model of a wheel for drawing water from wells. 560  
 3 Cases, Valero, Valencia.—Wheel for drawing water from wells. 560  
 4 Mirapeix, Bartolomé, Barcelona.—Fire Hose. 564

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.



# NORWAY.

[The Machinery Exhibit of Norway is installed in the Main Building, and catalogued in Part I.]

# ITALY.

(North of North Aisle, Columns 16 to 19.)

## Metal, Cloth, Paper-working, Agricultural Machinery, Motors.

### Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

- Paresi, E. Giuseppe, Parma.—Furnace for lime. 506  
Agrarian Committee of Chiavari.—Sulphur machine. 508

### Machines and Implements of Spinning, Weaving, and Paper Making.

- Ferrari, Bartolomeo, Parma.—Apparatus for silkworms. 520

### Machines for Printing, Making Books, Paper Working, etc.

- Perisi, Achille, & Son, Naples.—Pianografo-voltacarte, mechanical invention. 545

### Motors, Power Generators, etc.

- Zanini, Pasquale, Rome.—Steam machine. 550

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

### Hydraulic and Pneumatic Apparatus.

- 6 Gasparini, Giacomo, Rome.—Hydraulic machine. 563

### Agricultural Engineering and Administration.

- 7 Berteà, Stefano, Alessandria.—Lorenzo machine. 582

### Aerial, Pneumatic, and Water Transportation.

- 8 D'Allessandro, Benedetto, Benvenuto, Rome.—Life-preserver. 594  
9 Villa, Cav. Ignazio, Milan.—Drawings of nautical machinery and architecture. 594  
10 Origone, Paolo, Genoa.—Design for an iron steamer, and model in relief. 595  
11 Zaffarini, Cav. Cesare, Ferrara.—Nautical machine. 597

# BRAZIL.

(North of North Axis, Columns 16 to 21.)

## Machinery, Weapons, Hardware, Motors, Vessels and Appliances.

### Chemical Manufactures.

- 1 Souza, Fausto de.—Metal fuses for artillery. 204
- 2 Pyrotechnical Laboratory, Rio de Janeiro.
  - a Fuses for artillery. 204
  - b Apparatus for guiding signal rockets. 205
- 3 Military Archives of Rio de Janeiro.—Pyrotechnical maps. 205

### Weapons, etc.

- 4 Army Arsenal, Rio de Janeiro.
  - a Breech-loading rifle, and sword bayonet; revolver. 265
  - b Model of rifled brass field gun, with accessories. 266
  - c Mounted rifled gun and casemate; brass rifled gun and accessories; brass mortars; shot and shell, canister and grape for heavy ordnance; apparatus for guiding rockets, used as a projectile. 267
  - d Spears. 266
- 5 Arsenal at Bahia.—Drum used by the Brazilian army. 265
- 6 Arsenal in the Province of Rio Grande do Sul.—Weapons and articles used by the Brazilian army. 265
- 7 Navy Arsenal, Rio de Janeiro.
  - a Leather buckets for artillery service. 266
  - b Leather cartridge boxes for heavy ordnance. 267

### Hardware, Edge Tools, Cutlery, and Metallic Products.

- 8 Silvino, Tripo di.—Hand tools. 280
- 9 Province of Minas Geraes.—Hand tools and instruments. 280
- 10 Arsenal of the Province of Bahia.
  - a Hand tools. 280
  - b Locks for naval and ships' stores. 284
- 11 Ipanema Iron Works.
  - a Hand tools. 280
  - b Imperial crown and cross of cast iron; samples of cast iron. 283
- 12 Army Arsenal, Rio de Janeiro.—Cast iron ventilator, and samples of cast iron. 283
- 13 Santos, Cauto dos.—Imperial crown of cast iron; samples of cast iron. 283
- 14 Bleunembach & Bro.—Chair of cast iron; samples of iron grates. 283
- 15 Silchal, Fabiano.—Horse shoes of different shapes. 284

### Engineering, Architecture, Maps, etc.

- \* 6 Navy Yard at Rio de Janeiro.—Models of dry docks cut into the rock. 330

### Machines and Tools for Working Metal, Wood, and Stone.

- 17 National Mint, Rio de Janeiro.—Stamping machine, edging machine, hand tools and instruments. 510

### Machines and Implements of Spinning, Weaving, Felting, and Paper Making.

- 18 Rezende, Luiz de, Rio de Janeiro.—
  - a Machine for reeling and skeining silk, apparatus for counting the twist, samples of silk and cocoons. 520

### Motors, Power Generators, etc.

- 19 Navy Arsenal, Rio de Janeiro.
  - a Models of engines for small monitors and mortar ships; steam engine to be used as motor at the pyrotechnical laboratory at Rio de Janeiro. 552
  - b Pulleys, pulley stand shafts, and flying wheels. 553
- 20 Army Arsenal at Rio de Janeiro.
  - a Iron drums and chairs for transmitting motion. 553
  - b Iron screw propeller and its cog wheel. 554

### Hydraulic and Pneumatic Apparatus.

- 21 Costa, T. C. da.
  - a Pumps. 564
  - b Hydraulic ram. 563
  - c Nozzle fire plug. 564
- 22 Neves, F. Candido das, Rio de Janeiro.—Stop cocks. 566
- 23 Russell, B. G., Rio de Janeiro.—Lead pipes and hydraulic syphons, copper valve box. 566

### Machines used in Preparing Agricultural Products.

- 24 Birrenback & Bros., Iron Works, Province of S. Paulo.—Hand mill. 585

### Aerial, Pneumatic, and Water Transportation.

- 25 Navy Arsenal, Rio de Janeiro.—Models of iron clads, casemate and monitor ships, men of war and steam launches; models of corvettes and launches, designed by Trajano de Carvalho. 595

### Arboriculture and Forest Products.

- 26 Navy Arsenal, Rio de Janeiro.—Samples of wood used for ship building. 600

or classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

# ARGENTINE REPUBLIC.

(North of North Aisle, Columns 21 to 23.)

## Cloth and Paper-working Machines, Vessels.

**Machines and Implements of Spinning, Weaving, and Paper Making.**

Provincial Commission, Province of Santiago del Estero.—Weaving loom. 522

**Machines for Printing, Making Books, Paper Working, etc.**

Estrada, Angel, Prov. of Buenos Ayres.—Samples of printing, types, electrotypes, corners, etc. 542

Cafarte, Bernardo R., Province of Buenos Ayres.—Album of typographic works. 542

**Ilway Plant, Rolling Stock, etc.**

Gardella, Luis, Province of Buenos

Ayres.—Plan of a rotary machine with boiler. 570

**Aerial, Pneumatic, and Water Transportation.**

5 Provincial Commission, Province of Corrientes.—Oars. 594

6 Office of the Harbor Master, Province of Buenos Ayres.—Model of mixed frigate, with wooden hull and auxiliary machine; models of steam lighter, pleasure steam yacht, and whaler. 595

7 Roibon, Federico, Province of Corrientes.—Model of rafts for crossing the "Paso de la Patria" during the war with Paraguay, in 1866. 596

# RUSSIA.

(North of North Aisle, Columns 22 to 25.)

## Metal, Stone, Cloth, Paper-working Machines.

**Mines, Tools, etc., of Mining, Chemistry, etc.**

7evieff, Andrew, Moscow.—Gold-sealer's skins and sample of leaf gold. 505

Administration of the Mining District in Western Poland.—Plan of gas melting furnace. 506

Admiralty Electroplate Establishment, Cronstadt.—Specimens of metallic types by electrotyping. 508

**Machines and Tools for Working Metal, Wood, and Stone.**

Essner, Gustavus, St. Petersburg.—Planing, drilling, and turning machine. 515

Popoff, Basil, St. Petersburg.—Workbench. 515

Practical Technological Institute, St. Petersburg.—Lathes, planing, shaping, and drilling machines. 515

7 Smithery of the Port of St. Petersburg.—Apparatus for stamping bolts with threads; specimen of bolts, for armor plates and stamped row locks. 515

**Machines and Implements of Spinning, Weaving, Paper Making, etc.**

8 Tilzoff, John, Moscow.—Weaving slays. 520

**Machines, etc., used in Sewing, Making Clothing, etc.**

9 Rauer, Augustus, Warsaw.—Album of reduced patterns for tailors. 531

**Machines for Printing, Making Books, Paper Working, etc.**

10 Allassoff, Michael, St. Petersburg.—Type-writing machine, and new photolithographic process of music printing. 542

Classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

## Machinery, Motors, Railway Plant, Vessels.

- 11 Goldberg, Isidor, St. Petersburg.—  
*a* Printing types and electrotypes, stereo-  
 types. 542  
*b* Pasteboard cutter. 546  
 12 Lorchettes, Alfred, Liban.—Stegan-  
 ographic apparatus. 542  
 13 Wolf, Morris, St. Petersburg.—  
 Sample book of typographical types. 542

## Motors, Power Generators, etc.

- 15 Lesser, Gustavus, St. Petersburg.—  
 Section of a steam cylinder with steam  
 distributing apparatus. 550  
 16 Steam Engine Works, Port of Cron-  
 stadt.—Steam engine and boiler for a  
 barge. 550  
 17 Lilpop, Rau, & Lovenstein, War-  
 saw.—Portable steam engine, ten horse  
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 18 Pootilof Iron Works Co., St. Peters-  
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 18*a* Imperial Technical School, Moscow.  
 —Model of a steam engine with parallel  
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 19 Admiralty Tyova Works, near St.  
 Petersburg.—Chains and moving tackle.  
 553  
 20 Herzesinesk, W., Warsaw.—Cordage  
 transmission straps. 553  
 21 Hofmark, Bruno, St. Petersburg.—  
 Wire transmission belt. 553  
 22 Miiek, William, Warsaw.—Cordage  
 transmission straps. 553  
 23 Tember, K., & Schovede, L., War-  
 saw.—Leather transmission belts. 553  
 24 Cohnfeld, S., St. Petersburg.—Auto-  
 matic feeding apparatus. 555

## Hydraulic and Pneumatic Apparatus.

- 26 Admiralty Tyova Works, near St.  
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*a* Dawnton's ship pump and fire pump. 560  
*b* Diving apparatus. 567  
 27 Friedland, Michael, St. Petersburg.  
 —Pumps, rotary system. 560  
 28 Liarsky, Nicolas, Smolensk.—Load  
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 29 Tretzer, Adolphus, Warsaw.—Fire  
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 30 Lange & Co., Moscow.—Fire engine  
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 31 Mick, William, Warsaw.—Fire en-  
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 32 Hesse, Charles, Riga.—Metal cap-  
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## Railway Plant, Rolling Stock, etc.

- 34 Lilpop, Rau, & Loevenstein, War-  
 saw.  
*a* Belts, screws, and other railway and car  
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*b* Buffer spring and coupling appliance;  
 wheel and spring for railway carriages.  
 572  
 35 Shiloff, L. P., Moscow.  
*a* Patent railway car lock. 571  
*b* Railway signals. 575  
 37 Pootilof Iron Works Co., St. Peters-  
 burg.—Railway ties, axles, and wheels.  
 573  
 38 Abookoff Steel Foundry, near St.  
 Petersburg.—Railway wheels, ties, and  
 axles. 573  
 39 Russian Rail Manufacturing Co.,  
 Government of Riazan, District of Pronsk.  
 —Railway ties, chairs, nails, bolts and  
 nuts. 574

Machinery used in Preparing Agri-  
cultural Products.

- 41 Yosefov Sugar Manufacturing Co.,  
 Government of Warsaw.—Metallic  
 sugar loaf form. 581

Aerial, Pneumatic, and Water Trans-  
portation.

- 42 St. Petersburg River Yacht Club.—  
 Rowing boats. 594  
 43 Alexandroosky, —, St. Petersburg.  
 —Air bags for raising sunken vessels. 594  
 44 Makaroff, T. R. N., St. Petersburg.  
 —Patent safety mats for instantly stop-  
 ping leakage in ship bottoms. 594  
 45 Modeling Workshop in the Naval  
 Museum, St. Petersburg.—Models of  
 ships, yachts, and circular iron clads. 595  
 46 Russian Steamboat & Trade Co.,  
 Odessa.—Model of steam schooner for the  
 coal trade. 595  
 47 Naval Museum, St. Petersburg.  
*a* Models of a floating dock and graving  
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*b* Model of steering apparatus. 597  
 48 Engineers' Shop of the Port of St.  
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 49 Steam Engine Works, Port of Cron-  
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 51 Mast Maker's Shop, Port of Cron-  
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.

# THE PENNSYLVANIA RAILROAD

IS THE

**Best Constructed and Best Equipped Railway  
on the American Continent.**

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**THE ENTIRE LINE** between New York and Pittsburg is laid with a double track of steel rails, weighing sixty-seven pounds to the yard. These rails are secured to oak ties, averaging 2600 to the mile of single track, and are connected between the ties, thus preventing all jarring or jolting.

**THE ENTIRE LINE** is ballasted with broken stone eighteen inches in depth, securing firmness and freedom from dust.

**OVER ONE HUNDRED MILES** of third track is laid at suitable intervals, affording facilities for keeping freight and way trains entirely out of the way of Express Trains.

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**THE BLOCK-SIGNAL SYSTEM**, operated by telegraph, extends over the entire line and renders accidents almost impossible.

**THE LOCOMOTIVE ENGINES AND PASSENGER CARS** run are built according to standards established by the Company, of the very best materials, and are recognized models of efficiency, strength, and comfort.

**ALL PASSENGER TRAINS** are equipped with the Westinghouse Automatic Vacuum Brake, which has been pronounced by competent authorities in Europe and America the best safeguard ever introduced on railways.

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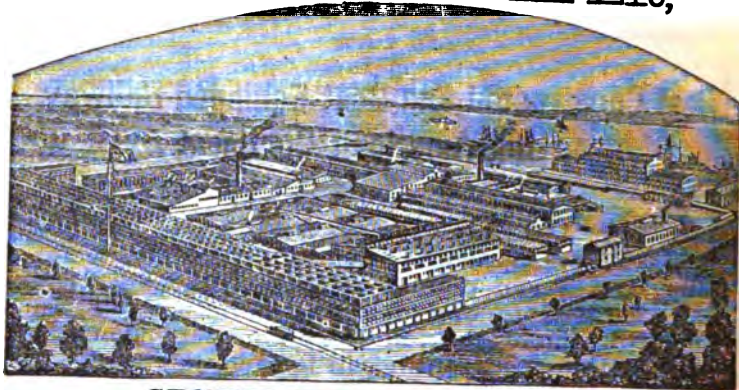
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**THE COMFORT AND CONVENIENCE** of travelers are paramount considerations.

FRANK THOMSON,  
*General Manager.*

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D. M. BOYD, Jr.,  
*General Passenger Agent.*

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**GLUE, SAND PAPER,**



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 EMERY PAPER AND EMERY CLOTH,  
 CURLED HAIR AND STUFFING HAIR,  
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**FACTORIES:**  
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 NEWARK, N. J.  
 WOBURN, Mass.

**STORES:**  
 Philadelphia, 730 Market Street.  
 New York, 67 Beekman Street.  
 Boston, 143 Milk Street.  
 Chicago, 182 Lake Street.

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**FIRE AND MARINE**

**INSURANCE COMPANY**

**SPRINGFIELD, MASSACHUSETTS.**

**Cash Assets, \$750,000. Capital Stock, \$1,500,000.**

**DWIGHT R. SMITH, President.**  
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**A. J. HARDING, General Agent.**

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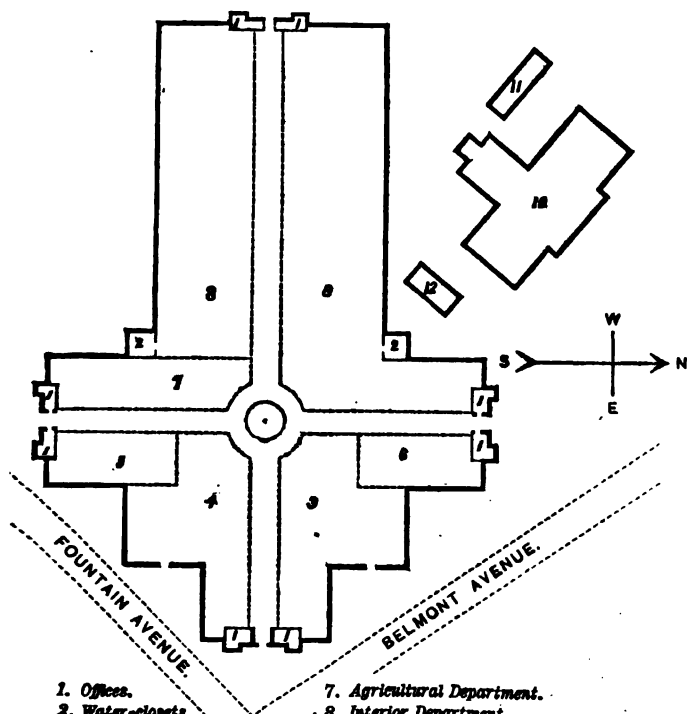
**No. 110 FOURTH Street below Chestnut,  
 PHILADELPHIA.**

**BRANCH OFFICE IN WASHINGTON, D. C.**

**BUSINESS PROMPT. TERMS REASONABLE. CONSULTATION WITHOUT CHARGE.  
 CALL OR SEND FOR BOOK OF INSTRUCTIONS.**

# THE UNITED STATES GOVERNMENT BUILDING.

Scale, 150 ft. to 1 in.



1. Offices.
2. Water-closets.
3. War Department.
4. Navy Department.
5. Post Office.
6. Treasury Department.

7. Agricultural Department.
8. Interior Department.
9. Smithsonian Institution and Food Fishes.
10. United States Hospital.
11. Tent.
12. Laboratory.

Total Length, 504 ft.

Width, 380 ft. Height, 50 ft.

# SPECIAL BUILDINGS.

## EXHIBITION MADE BY THE UNITED STATES GOVERNMENT.

### CONTRIBUTING DEPARTMENTS.

WAR DEPARTMENT.—Hon. J. DONALD CAMERON, Secretary of War.

NAVY DEPARTMENT.—Hon. GEORGE M. ROBESON, Secretary of the Navy.

TREASURY DEPARTMENT.—Hon. LOT M. MORRILL, Secretary of the Treasury.

INTERIOR DEPARTMENT.—Hon. Z. CHANDLER, Secretary of the Interior.

POST-OFFICE DEPARTMENT.—Hon. JAMES M. TYNER, Postmaster-General.

AGRICULTURAL DEPARTMENT.—Hon. FREDERICK WATTS, Commissioner of Agriculture.

SMITHSONIAN INSTITUTION.—Prof. JOSEPH HENRY, Director of Smithsonian Institution.

COMMISSION OF AMERICAN FOOD FISHES.—Prof. S. F. BAIRD, Commissioner.

### BOARD ON BEHALF OF U. S. EXECUTIVE DEPARTMENTS AT THE INTERNATIONAL EXHIBITION OF 1876.

Col. S. C. LYFORD, Ordnance Corps, U. S. Army, Chairman of the Board, and Representative of the War Department at the Exhibition.

Rear Admiral THORNTON A. JENKINS, U. S. Navy, Representative of Navy Department.

Hon. R. W. TAYLER, First Comptroller Treasury, Representative of Treasury Department.

Hon. JOHN EATON, Commissioner of Education, Representative of Interior Department.

Dr. C. F. MACDONALD, Superintendent Money Order Bureau, Representative of Post-Office Department.

WILLIAM SAUNDERS, Superintendent Propagating Garden, Representative of Agricultural Department.

Prof. S. F. BAIRD, Assistant Secretary Smithsonian Institution, Representative of Smithsonian Institution, and Commissioner of American Food Fishes.

WM. A. DE CAINDRY, Secretary of the Board.

## UNITED STATES GOVERNMENT BUILDINGS.

### MAIN BUILDING, No. 51.

Architect, JAMES H. WINDRIM.—Size, Floor Area, 102,840 square feet.

This structure is situated at the intersection of Belmont and Fountain Avenues, is built in the form of a Latin cross, and is of framed white pine, unplanned, with two tiers of windows. It contains for exhibition contributions from the different Executive Departments of the United States Government.



**ORDNANCE LABORATORY BUILDING, No. 54.**

Architect, Col. T. T. S. LAIDLEY, Ordnance Corps, U. S. A.—Size, 53 feet by 23 feet.

This building is located north of Main Building, and is built of wrought iron, rivetted, covered with a light casing of wood. It is designed with the view of preventing the great loss of life that usually results from the demolition of a building of ordinary construction, by the explosion of even a small amount of powder. In the event of an explosion in this building, the roof and sides fall at once, and the iron frame is left standing, in order to shield the inmates from being crushed beneath the ruins. The building, as well as its contents, is on exhibition.

**UNITED STATES ARMY POST HOSPITAL, No. 52.**

Size, 35 feet by 39 feet, and Addition of 40 feet by 14 feet.

This Hospital is situated north of the Main Building, is two stories in height, and is intended to hold twenty-four beds. It is built of wood, and contains medical appliances of all kinds, including medicines, instruments, hospital stores, clothing, books, and furniture, models of hospitals, cars, boats, ambulances, etc., microscopical and other specimens. The construction of the building and its contents are on exhibition.

**TRANSIT OF VENUS BUILDINGS.**

This structure is situated southwest of Government Building, consisting of,—

1. Transit House.—Dimensions, 10 feet by 8 feet.
2. Photographic House.—Dimensions, 12 feet by 10 feet.
3. Equatorial House.—Dimensions, 11 feet in diameter.

All the instruments employed in observing and recording the phenomena of the late transit of Venus are so placed on exhibition that the various processes will be exemplified by practical workings.

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**WAR DEPARTMENT.**

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**Signal Section.****SIGNAL SECTION.**

*The instruments exhibited in the Signal Service Section of the United States Army are all of American manufacture, and only such as have been devised for the signal service of the army by officers or enlisted men of the corps.*

**METEOROLOGICAL INSTRUMENTS.**

The display of self-recording instruments consists of barographs, anemographs, thermographs, rain-gauges, and evaporator. Some of these are worked by electrical batteries, others by mechanical means. Those recording the velocity and direction of the wind, the amount of rainfall and changes of temperature, are connected with their respective wind-cups, anemometers, rain-receivers, and thermometers, and are placed upon an artificial glass roof, beneath which the recording apparatus is placed, each instrument having its own battery. Official currents of air and water are used to obtain uninterrupted working.

**UNITED STATES SIGNAL STATION.**

This department consists of a model United States signal service station, similar to those established in different sections of the United States. Here are exhibited the meteorological instruments used on station; the manner

of taking, recording, and transmitting to the central office at Washington the observations upon which the weather reports, storm warnings, etc., are based; the method of publishing and distributing the predictions forwarded from the office of the Chief Signal Officer of the army, as well as the various means adopted to furnish at the earliest practicable moment all weather information which would be of benefit to commerce and agriculture. Specimens of the publications, charts, and maps of the office of the Chief Signal Officer are also exhibited.

**PRINTING DEPARTMENT.**

Here are exhibited in detail the printing of "weather maps" and "farmers' bulletins."

**FIELD WORK.**

This portion of the exhibition comprises a complete United States field-telegraph train, with capacity to erect 50 miles or more of portable telegraph line; portable signal tower 75 feet high, with its wagon; semaphore, signal flags, torches, rockets, bombs, and mortars, colored lights, heliographs (for communicating by means of sun flashing), and international flags, and other apparatus used in communicating with troops in the field or with vessels.

## Quartermaster, Medical, Engineer Sections.

## MODEL DEPARTMENT.

The model department comprises models of the different instruments used in field signaling, models of station meteorological instruments and portable instrument shelter, and a new electrical instrument for transmitting by telegraph the isobarometric and isothermal lines of the Signal Service weather maps.

## QUARTERMASTER SECTION.

**Uniforms.**—Revolutionary uniforms, and those of succeeding years; present uniforms of the army.

**Camp and Garrison Equipage.**—Tents, flags, cooking utensils and tools; field music—drums, bugles, etc.; bunks, blankets, and bedsacks.

**Means of Transportation.**—Wagon and harness; ambulance and harness; aparajo; pack saddle; historic wagon; portable and traveling forges.

**Machines.**—For cutting out clothing; for brass screwing shoes; for testing fabrics.

**Farriers' and Saddlers' Tools.**

**Standard Horse Shoes.**

**Veterinary Chest.**

**Kiernan's System of Horse Shoeing.**

## MEDICAL SECTION.

This display represents the character of the work of the medical staff of the United States army in peace and war. Four classes of objects are exhibited by the objects themselves, by models, or by photographs.

## 1. Hospitals for Sick and Wounded Soldiers.

a Post hospital of 24 beds of full size.

b Four full-sized hospital tents, with furniture representing the tent ward which served as the unit of the "tent field hospital" used during the civil war of 1861-65.

c Models of the barrack "General Hospitals" used during the war of 1861-65, viz.: a model of the form of barrack ward for 60 beds, on the scale of half an inch to the foot; and four ground-plan models showing combinations of such wards in general hospitals.

## 2. Medical and Hospital Supplies.

Samples of articles on the medical supply table of the army; medicines; hospital stores; surgical instruments and dressings; hospital furniture, bedding, clothing, and appliances; books, blank forms for reports, and stationery; medical panniers and medicine wagons, and samples of the artificial arms, legs, trusses, and other apparatus issued by the medical department to disabled soldiers.

## 3. Transportation of Sick and Wounded.

Stretchers, litters, and ambulances, full size and models; models of hospital railroad cars, hospital steamboat, and hospital ocean steamship, illustrating mode of transporting sick and wounded during the late war.

## 4. Treatment of Diseases and Injuries of Soldiers.

Army medical museum, represented by medical, surgical, anatomical, and microscopical specimens, photographs of specimens, and catalogue of museum; catalogue of Surgeon-General's office; photographed title pages of rare books on military medicine and surgery, etc.; medical and surgical publications of Surgeon-General's office.

The Post Hospital, for twenty-four beds, constructed from plans approved by the War

Department, contains the greater part of the display of the Medical Department, as follows:

Room 1, 45x25, a ward with twelve beds, furniture, bedding, clothing, etc.

Room 2 (the other ward, same size), models of hospitals, ambulances, hospital cars, boats, and ships, specimens from museum, etc.

Room 3, the dispensary, samples of medical supplies.

Room 4, the office, samples of surgical instruments, medical and surgical books, blank etc.

Room 5, dining room, table ware, and furniture.

Room 6, kitchen, cooking apparatus.

Room 7, office of officer in charge of the play.

Rooms on second floor, stretchers, bandage medicine chests, and panniers; artificial legs and arms, trusses for rupture, and other apparatus.

Tent ward, full-sized hospital tents, placed in the rear of the post hospital.

Ambulances, medicine wagons, and other full-sized, parked near the tent ward.

## ENGINEER SECTION.

## Maps and Drawings.

Map of the United States, showing work done by corps of engineers, 1776-1876.

Drawing of Rock Island bridge.

Map of canal and locks, Des Moines and Iowa, to Rock Island, Illinois.

Drawings of improvements of Mississippi river between mouths of the Illinois and Ohio.

Plans of improvements on Hudson river near Albany.

Drawing of iron landing pier, Delaware breakwater harbor.

Drawing of foundation of Fort Delaware. Drawing of dynamometer for determining force required to screw down iron piles, Lewes pier.

Drawing of Delaware breakwater, with tails of breakwater and ice barrier.

Map of shore of Delaware harbor, including Cape Henlopen.

Chart of Schuylkill river, from mouth of Chestnut Street bridge, showing improvements made by United States in its navigation from 1870 to 1875.

Drawing of dredge-boat "Henry B. Hall."

Drawing of mortar mill and concrete works.

Map of flood plain of Minnesota and Mississippi rivers, showing connection with Red river and Lake Winnipeg.

Drawings of snag boat.

Chart of Galveston entrance.

Detailed drawings and photographs, illustrating experimental works at Galveston entrance.

Chart of Indianola harbor.

Detail drawings of end dock.

Charts of Lake Survey.

Lighthouse drawings, Eleventh district. Drawing of river and harbor works.

Plans of cribs and pile pier at Chicago.

Maps and hydrographs of Ohio, Missouri, and Great Kanawha rivers.

Drawings of crib work for piers on Ontario.

Special map of region west of Mississippi river.

Special triangulation map of region west of Mississippi river.

Detailed topographical sheets of above region.

Specimen copies of photolithographs.

## Engineer, Ordnance Sections.

crayon topographical atlas, and geological atlas.

**Models of Harbor Improvements.**

Work at Hallett's Point, N. Y. (Hellgate.)

Northern extremity of Cape Cod.

Section of iron landing pier of Delaware breakwater harbor.

Iron ice barrier proposed for Horse Shoe of Delaware river.

Breakwater at Dunkirk, N. Y.

Crib and lighthouse on Spectacle reef, Lake Huron.

Angle crib and lighthouse at Harbor of Refuge, Lake Huron.

Model showing shore lines and breakwater at Harbor of Refuge, Lake Huron.

Crib and pier at Chicago, Illinois.

Crib work for piers on Lake Ontario.

"Mattress" or "apron" used in improvements of harbor at mouth of Cape Fear river, N. C.

**Models of Machinery and Appliances.**

Steam drilling scow.

Capstan-head and machinery for screwing down iron piles at Delaware breakwater landing pier.

Derrick for landing shafts.

Eccentric clamp or "nipper" for sustaining piles.

Snag boat, showing hull.

Dredge-boat "McAlester."

Large grapple.

**Photographs.**

Views of Hallett's Point, N. Y.; snag boat; Red river; cribs and piers at Chicago, Ill.; country west of Mississippi river (Wheeler expedition).

**Materials, Specimens, and Samples.**

Specimens of borings at site of landing pier of Delaware breakwater; of iron used in construction of landing pier; of timber piles taken from between tides at Reedy Island; ice barrier; of building stone, concrete, and woods, collected from various parts of the United States; of fossil trees; of large cypress stump, taken from mouth of Cape Fear river, N. C.

**Miscellaneous.**

United States bridge equipage, pontoon wagons, loaded; tool wagon; forge; model of bridge train, wagons, and loads; reserve and advance guard bridges; siege and mining tools; field photographic outfit; reconnaissance instruments; bridge model; models of torpedoes; models of apparatus for measuring subaqueous explosions, in glass tank; torpedoes, full size, models, 1874-75; ground mine; cable stop; junction boxes; torpedo cables, multiple and single; operating box; electrical apparatus used with torpedoes; iron plate from torpedo target, showing effects of thirty pounds of dynamite exploded under water at thirty feet distance; models of King, De Russy, and Hunt self-depressing gun carriages; models of mortar carriage and muzzle-pivoting gun carriage; surveying, astronomical, and barometrical instruments for field work; publications of the engineer bureau.

**ORDNANCE SECTION.****Sea Coast Guns.**

30 in. Rodman gun, on carriage and chassis, with hydraulic buffer, on platform; implements.

12 in. Thompson b. l. rifle, experimental, under Laidley's gun lift.

9 in. Sutcliffe b. l. rifle, experimental, on carriage and chassis, with Sinclair's friction-brake, mounted on platform; implements.

30 in. Woodbridge gun, experimental; in slings, under Laidley sling cart.

8 in. m. l. converted rifle, experimental, on 30 in. casemate carriage and chassis, with pneumatic buffers, mounted on platform in model of casemate; implements.

Mann's 8 in. b. l. rifle, wrought iron, experimental, mounted on top carriage and chassis.

8 in. siege howitzer, mounted on wooden siege carriage.

**Siege Guns.**

4.5 in. siege rifle gun, mounted on Benton's experimental iron siege carriage, with limber; implements.

**Field Guns.**

Light 12 pdr. gun, 4.62 in. wooden carriage, with limber; implements.

Sutcliffe 3.9 in. b. l. rifle, experimental.

Hotchkiss 3.9 in. b. l. rifle, experimental.

Moffat 3.15 in. b. l. rifle, experimental.

Mann's 3 in. b. l. rifle, experimental.

3 in. wrought iron, m. l. rifle, mounted on Benton's experimental iron 12 pdr. field carriage, with limber and caisson; implements; model horse harnessed to limber, with mounted driver.

30 pdr. Parrot rifle, mounted on Watervliet arsenal experimental iron field carriage, with limber.

3 in. Whitworth field piece, on carriage.

2.5 in. Woodbridge gun, experimental; fired 1327 times.

Hotchkiss field cannon, experimental.

Rebel b. l. pieces, field and boat, experimental skids.

Lyman's multicharge rifle, cal. 6 in., experimental skids.

Bomford and Wade perforated gun, experimental; used to determine experimentally exterior lines of heavy cannon, by means of pressure at different points of bore.

Mountain howitzer, mounted on carriage.

Mountain howitzer battery, on stands.

**Volley and Repeating Guns.**

Gafling gun, short barrel, cal. 45, on cavalry carriage; model horse in harness.

Hotchkiss revolving cannon, on carriage, experimental.

Union repeating (coffee-mill) gun, on carriage, experimental.

Regua battery, on carriage, experimental.

Guthrie & Lee gun, on carriage, experimental.

Vandenburgh volley gun, on carriage, experimental.

**Revolutionary Guns.**

6 pdr. French guns, bronze, presented by Lafayette; forming enclosure around models of modern gun plant.

12 pdr. siege gun, bronze, mounted on wooden carriage, with limber.

8 in. howitzer, bronze, mercur.

24 pdr. howitzers, Byer's; cast in Philadelphia.

Anthony Wayne howitzers, intended to be used on horseback; cast in Germantown, Philadelphia, by D. King.

**Mortars.**

13 in. sea-coast mortars, on bed, with centres, pintles, chassis mounted, on platform; implements.

24 pdr. Coehorn mortars, on beds.

**Carriages.**

New cavalry forge cart.

**Projectiles.**

Shot, shells, grape, canister, etc., for various weapons and calibres; smooth-bored and rifled; fired and unfired; hand-grenades,

## War and Navy Departments, Ordnance and Appliances.

bombs, rockets, torpedoes, etc. Experimental projectiles from West Point.

**Small Arms.**

Historical collection of muzzle-loaders, wall-pieces, muskets, musketoons, rifles, pistols, flintlocks, percussion, breech-loaders, fixed and movable chambers, revolvers, tip-up barrels, needle guns, cyllindere, magazine, chassepot, repeating, coffee-mill, drop-lever, slap-over guns, American and foreign.

Bayonets, blades, knives, swords and scabbards, lances, pikes, halberds, cleaning appliances, etc.

**Accoutrement.**

Sets of infantry, cavalry, and artillery equipments; cartridge boxes, canteens, metal work on scabbards, etc.; powder horns and flasks, cartridges, and cases of various materials and calibres; primers, locks, fuses; cartridge-making machinery.

**Models.**

Minute man.

Rifle private, full dress, Hall breech-loading rifle, 1818.

Private, mounted rifles, Mexican War, 1845. Infantry private, 1858-1866, regulation equipment.

Cavalry private, 1865, Spencer, Mann's equipment.

Infantry man, full dress, 1876.

Infantry man, marching outfit, 1876.

Cavalry man, present, full dress, 1876.

Light-artillery man, full dress, 1876.

Horse, carved in wood, for cavalry equipment.

Horse, carton pierre, for artillery harness.

Horse, stuffed, for Gatling cart.

Rock Island Arsenal, Illinois, in photo-relief.

Hitchcock gun-plant, with gun in sections, with set test specimen Hitchcock gun material, showing tensile and torsional strength; sample forging-disk; Dank's iron bloom; Graff, Bennett, & Co., Hitchcock's gun materials; long turnings H.G. material; and thin turnings H.G. material.

Rodman gun-plant, with specimen, showing tensile compression and torsional strength of the American cast-iron used in Rodman gun.

Woodbridge gun, with set specimens, showing tensile strength of Woodbridge gun construction; reel-wire for Woodbridge gun; and half-ring, bronzed, Woodbridge gun.

Cast of bore in gutta-percha of 8 in. m. l. converted rifles, with centres for same on trees.

Glass-case specimens, containing small models, relics, etc.

Tree, cut in two by musketry at the battle of the Wilderness, Va.

Boards of component parts of small arms, and progressive work on scabbards.

Rodman guns, mounted in barbette and in casemate.

Mortar, mounted on bed with centre pivot chassis.

Table with models, field and siege carriage.

Lead bullets, joined together by collision in mid-air at the battle of Petersburg, Va.

**Machines.**

Casemate gin; Baxter engines.

**Cartridge Machinery.**

Portable gas furnace for annealing cartridge shells; double-action press; drawing presses; case and cup anvil trimmers; header; primer; cup venting, and impression machines; bullet, ball-trimming, and greasing, tapering, and loading machines; cup anvil press; rotary fan; packing tables and work boxes.

**Gun-making Machinery.**

Drop hammer; forge; trimming jumper; barrel-boring lathe, for nut boring and quick boring; barrel-turning lathe; straightening stand; polishing stand; vises, with machine for bending swivels; trimming press; drill press; rifling, brush, and profiling machines; milling and screw machines; clamp milling machine; machine for bending swivels; grindstone; engine lathe; emery mill grinder; second drilling receiver; first turning stock; lock-bedding with post and spare pulley; air pump and reservoir; bench for assembling guns.

**Instruments.**

Laidley laboratory, showing principles of construction, and illustrating experiments in ballistics; models pressure; pendulum epreuve; camera lucida for representation with model of Frankford target; Shultz chronoscope, with Russel's interrupter; vignotti machine; Le Boulange chronograph; Benet thread, and electro-ballistic machines; target for electro-ballistic machines; recoil dynamometer; mercurial densimeter; scales for mercurial densimeter; stereometer; collection of inspecting instruments for cannon and projectiles for 3 in. rifle and 15 in. gun; iron tube for firing through with safety; firing stand.

**Miscellaneous.**

Boards showing rifle practice.

Publications from ordnance office and artillery school.

Medal, army target practice; stadia, silver (1 cavalry, 1 infantry); telemeters (1 battery, 1 infantry, and 1 field).

Corrugated iron powder barrels; copper powder barrel.

## NAVY DEPARTMENT.

**ORDNANCE BRANCH.**

**Rifled and Smooth Bore Guns.**—15 in. guns on Ericsson's and Edes's steam carriages.

[These two guns are mounted on a circular platform and inclosed in a wooden turret, representing in size and form a monitor's iron turret.]

Pieces of heavy ordnance, muzzle and breech loading, of antiquated styles and manufacture.

Guns from 11 in. to 3 in. calibre, and 100 pdrs. to 12 pdrs., variously mounted.

**Torpedoes.**—Automatic, stationary, and movable; electric batteries, wires, fuses, etc.;

illustrating progress made by the torpedo school.

**Small Arms.**—Muskets, rifle and smooth bore, breech- and muzzle-loading; pistols, swords, cutlasses, bowie knives, battle axes, tomahawks, boarding helmets, etc.

Ordnance publications.

Samples of gunpowder.

Inspecting instruments for heavy guns; implements for gauging and inspecting shot and shell.

Fuse presses; machines for making percussion caps; metallic cartridges; solid head metallic musket and pistol cartridge now used in the navy, showing the different stages of

## Navigation, Observatory, Docks, Engineering, Etc.

manufacture; other musket cartridges and cartridge inventions in possession of the navy.

Rifle projectiles for heavy guns; inventions of Dahlgren, Holroyd, Dana, Parrot, Hotchkiss, James, Brooks, and other inventors.

Sub-calibre and elongated projectiles for smooth bore guns; solid shot, shell, incendiary shell, grape, canister, shrapnel, as used at present, and as previously used or proposed.

Projectiles which have been fired at iron targets; models of projectiles; model gun-carriages; war rockets, hand grenades; leather work of navy ordnance; sponges, rammers, and scrapers of different styles and inventions; fuses, cannon primers, and caps, cannon locks, night signals, impressions from guns, vent impressions; gun sights; breech, reinforce, and trunnion.

Figures of sailors, showing the dress and arms at different periods.

Miscellaneous articles and naval relics.

**NAVIGATION BRANCH.**

Navy bunting and navy flags, illustrating the present state of the bunting manufacture in the United States, as shown in the bunting made for the navy and known as "navy bunting," and also the mode of making flags by dyeing in pattern.

Bunting testing machine.

Navy sounding machines and auxiliary apparatus, showing the improvements in Sir William Thomson's sounding machine, and the various devices for detaching sinkers, and bringing up specimens of bottom, water, etc.

Navy signal apparatus, showing the colored lights (Coston's), with specimens.

Navy compasses and compass-testing instruments, showing specimens of the navy compass, azimuth circle, tell-tale, boat, and monitor compasses.

Portable compass-testing instrument, with specimens to illustrate development of the liquid compass.

Specimens of the old dry or air compass of American makers, illustrating the progress of improvement.

Adjustable binnacle.

**NAVAL OBSERVATORY.**

Publications.

Photographs of astronomical and other objects.

Chronometers.

Objects illustrative of American Arctic explorations.

Buildings and instruments used in the observations of the transit of Venus, December 8, 9, 1874.

**HYDROGRAPHIC OFFICE.**

Nautical charts, books, etc., published by the Hydrographic Office.

**NAUTICAL ALMANAC OFFICE.**

Publications of the office.

**YARDS AND DOCKS BRANCH.**

Plans of navy yards at Portsmouth, N. H.; Boston, Mass.; New York, N. Y.; Washington, D. C.; Norfolk, Va.; Pensacola, Fla., and Mare Island, Cal.

Plans of machinery at Boston navy yard; plans of dry docks at Boston, Mass., and Norfolk, Va.

Photographs of buildings, etc., at Portsmouth, N. H.; New York, N. Y.; Norfolk,

Va.; League Island, Pa.; Boston, Mass., and Mare Island, Cal.

Models of dry docks at Boston, Mass.; New York, N. Y.; Norfolk, Va., and Mare Island, Cal.

Pyramid of blocks of wood taken from naval vessels.

**STEAM ENGINEERING BRANCH.**

Machinery of the "Nipsic."

The machinery of the various sizes of steam launches.

The engines of the "Epervier."

Part of the original machinery of the torpedo boat "Spuyten Duyvel," a steam launch, with the first torpedo machinery used in the United States Navy.

Detail drawings of compound engines.

Photographs of machine shops, foundries, etc., showing improved tools used in the manufacture and construction of steam machinery.

Two compound boilers.

Baird's distiller, illustrating the method of making fresh water on board ship at sea.

**EQUIPMENT AND RECRUITING BRANCH.**

Young's ship's galley, with utensils for cooking for 500 men.

Hemp, manila, and wire rope; cable, blocks, chain cables, etc.

**CONSTRUCTION AND REPAIR BRANCH.**

Models of the "Constitution;" "Mississippi;" "Jamestown;" "St. Mary's;" "Portsmouth;" "Constellation;" "Niagara;" "Merrimac;" "New Ironsides;" "Hartford;" "Monitor;" "Kearsage;" "Vandalia;" "Constitution;" "President;" "Ohio;" "Enterprise;" "Washington," and "Fulton."

Full-rigged model.

**MEDICAL AND SURGICAL BRANCH.**

Medicines and Hospital Stores used in the Navy.

Surgical instruments and appliances usually supplied in the service; additional case of surgical instruments occasionally supplied in lieu of the standard operation case.

Cots and stretchers for transportation of wounded in action.

Model of a sick bay; the part of the ship usually allotted for hospital accommodation.

Model of hospital ship.

Fan for ventilating the hold of a ship in hot climates.

Starting funnel arrangement for aerating distilled water.

Set of record and account books for a naval hospital.

Fracture bedstead, for elevating the patient and changing position.

Bed with woven wire mattress.

Photographs and plans of naval hospitals.

**PAY, PROVISION, AND CLOTHING BRANCH.**

Articles and materials of clothing issued in the navy.

Package, showing the manner of packing clothing for sea.

Navy rations in glass jars, and packages of the same as prepared for sea.

"Small stores," articles for mess use: pans,

## Patents, Pensions, Lands, Indians, Education, Census.

spoons, knives, etc., tobacco, soap, needles, thread, and other small articles.

Packages of tobacco and soap as packed for sea use.

Paymasters' books and blanks for a ship with complement of 200 men; paymasters' sta-

tionery; stewards' stores, scales, and not used in issuing provisions.

Iron safe; locks used on paymasters' storerooms, three in number.

Specimen of candles.

## TREASURY DEPARTMENT.

*(Owing to want of sufficient appropriation by Congress for defraying the expense of the participation in the Exhibition by the Treasury Department, no definite arrangements have yet been made for contributions from it.—March 31, 1876.)*

## INTERIOR DEPARTMENT.

## PATENT OFFICE.

**Publications.**—Annual reports; official gazette; indexes to patents, general and yearly; volumes of patents, monthly and weekly; decisions of Commissioner of Patents; mechanical dictionary; official classification.

**Drawings of Models.**—Selected series (60,000), intended to serve in the illustration of the Patent Office work, from the classes given below.

**Models.**—Selected series (5000), intended to serve in the illustration of the Patent Office work, from the following classes: agriculture; harvesters; mills and presses; architecture; civil engineering; railways; navigation; metallurgy; metal working; wood working; steam; hydraulics; pneumatics; mechanical movements; hoisting; horse powers; journals and bearings; vehicles; fire arms; textile; printing and stationery; stone; clay; glass; leather; light; heat; electricity; household; chemistry; gas; ice, and fine arts.

**Miscellaneous Collections of Interest.**

—The original Declaration of Independence; Gen. Washington's commission from the Continental Congress; personal effects of Gen. Washington, such as furniture, porcelain, clothing, cane, sword, traveling escritoire, surveying compass, camp equipage, including tent, mess-kit, money-chest, etc.

Weapons of historical interest, such as bayonets from General Braddock's line of march; muskets presented by the Emperor of Morocco to Mr. Jefferson; war saddle of Baron De Kalb; sabres of honor presented to United States officers by sovereigns and beys; model of invention by President Lincoln.

## PENSION OFFICE.

**Publications.**—Annual reports; graphic illustrations; wall maps; wall charts; portfolios of diagrams, etc.; collections of historical interest; selections from the archives of the office relative to the Revolutionary war.

## GENERAL LAND OFFICE.

**Publications.**—Annual reports; digests, and other documents.

**Graphic Illustrations.**—Maps, charts, and atlas of surveys; miscellaneous collections; instruments and processes employed in the land survey.

## INDIAN OFFICE.

**Publications.**—Reports and other publications.

**Illustrations.**—Portraits, photographs, maps of reservations, etc.

**Models.**—Wigwams, communal houses, canoes, etc.

**Miscellaneous Collection of Interest.**—Costumes, male and female, adult and others; weapons of war and the chase; tents, wigwams, canoes, etc.; domestic utensils; specimens of food; toys, games, and festivals, arts and manufactures of the tribes; ethnological collections, etc.

## EDUCATION OFFICE.

**Publications by the Office.**—Annual and special reports, and circulars of information.

**Publications by other Offices or Persons.**—Foreign reports on American education; foreign educational reports and documents; treatises on pedagogy; and educational journals.

**Graphic Representations.**—Wall maps and charts; portfolios of engravings, drawings, and photographs; busts; paintings, and other portraits.

**Models of Educational Buildings.**—The primitive log school-house; country school-house of to-day; city graded school-house; college buildings; details as to dormitories, ventilative apparatus, school-rooms, etc.; models of adobe and sod school-houses.

**Specimens of School Furniture, Apparatus, and text-books.**—Historic collection, showing progress in text-books; specimens and models of school desks, seats, black boards, school maps, charts, etc.; specimens of modern slates, globes, natural history cabinets, chemical and philosophical apparatus, chemical appliances, etc.

**Miscellaneous Collections of Interest.**

—Selected volumes of state and city educational reports; catalogues of private schools, academies, seminaries, colleges, and professional schools, selected series; catalogues and reports of orphan, reformatory, and charitable schools for the young, etc.; catalogues and reports of institutions for the deaf, mute, blind, etc.; catalogues and reports of libraries; catalogues and reports of museums of art, of science, and of natural history.

These miscellaneous collections, some bound and others in their original condition, will be exhibited as showing specimens of the materials for the study of education, which are published by the systems and corporations themselves.

Volumes of manuscript returns made to the Bureau of Education by educators and school officials of every grade, and used in the preparation of its annual and special reports.

## CENSUS OFFICE.

**Publications.**—Decennial censuses; statistical atlas, 1870.

## Surveys, Post-Office, Agriculture.

**Graphic Illustrations.**—Maps, charts, and diagrams.

**Miscellaneous Articles of Interest.**—Original schedules of the census of 1790; selected volumes of schedules of subsequent censuses.

**GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES.****1st Division.**

**Publications.**—Reports, bulletins, etc.

**Graphic Illustrations.**—Topographical and geological atlases; wall maps and charts; panoramic photographs; stereoscopic views; photographic portfolios; photographic transparencies; paintings, landscapes, portraits, etc.

**Models and Reliefs.**—Topographical and geological relief maps; relief sections; models of displacement; models of ancient

ruined cliff habitations; models of same restored.

**Collections of Interest.**—Geological and mineralogical cabinets; pottery, costumes, weapons, implements, toys, etc.

**2d Division.**

**Publications.**—Reports; bulletins; monographs, etc.

**Graphic Illustrations.**—Topographical and geological atlases; wall maps and charts; panoramic and stereoscopic views; portfolios, albums, and transparent photographs.

**Models and Reliefs.**—Topographical and geological relief maps; geological structural sections; models of displacement.

**Miscellaneous Collections.**—Geological and mineralogical specimens; arms, clothing, etc.

**POST-OFFICE DEPARTMENT.**

The exhibition of this Department is classed under the following general heads:

**A MODEL WORKING POST-OFFICE.**

This is a branch office or station of the Philadelphia office, and shows the practical workings of the following divisions of this Department, viz.: Box and general delivery system; system of carrier delivery and collections; registered letter system; money-order system; foreign mail system, etc.

**RAILWAY MAIL SERVICE DIVISION.**

Two railway post-offices or postal cars, equipped with mail-bag catchers, and all other first-class appointments of that service, under charge of railway post-office clerks, by whom the mailing and distribution of outgoing mails is performed. Several models of mail catchers are also exhibited under this head.

Model mail cars,—small size,—exhibiting the practical working of the mail-bag catcher upon a miniature truck inside the building.

**STAMPS, STAMPED ENVELOPE, AND POSTAL CARD DIVISION.**

Machine in operation manufacturing stamped envelopes; machine in operation manufacturing postal cards; specimens of all stamps, stamped envelopes, and postal cards; specimens of registered-letter envelopes and post-office official envelopes; specimens of all United States post-office stamps and stamped envelopes, formerly used and now out of date.

**MAIL EQUIPMENT DIVISION.**

Leather pouches for letter mails; canvas bags for printed and miscellaneous matter; also registered-letter mail bags; mail locks, now in use; mail locks, out of use.

**TOPOGRAPHICAL DIVISION.**

Railway and general postal-route maps, and money-order office maps.

**DIVISION OF BOOKS AND BLANKS.**

Specimens of all books, blanks, etc., used by the Department; letter scales; marking and rating stamps.

**AGRICULTURAL DEPARTMENT.**

The exhibit from the Agricultural Department embraces as follows:

**BOTANICAL DIVISION.**

A collection of all the timber trees of the United States, in sections, showing interior and exterior surfaces; specimens of flowers, leaves, and fruits; herbarium specimens of grasses and other specialties.

**STATISTICAL DIVISION.**

Large outline maps of the United States, showing forest areas, extent, and value of farming lands, and amount of production, by counties; arrangement of charts and diagrams detailing amount of special products, by sections; statistics of farm animals, and illustrated statistics of industrial education; statistical album of miscellaneous details, with charts, diagrams, etc.

**ENTOMOLOGICAL DIVISION.**

Collections of fruit and vegetable models; birds beneficial and injurious to farmers and

orchardists; poultry types, illustrated by stuffed specimens; collection of grains and cereals; collection of textile fibres of the United States, with specimens of their manufacture; specimens of tobacco, from different tobacco-producing sections of the United States; mounted collection of beneficial and injurious insects.

**MICROSCOPICAL DIVISION.**

Series of water-color drawings illustrating typical genera of microscopic fungi; preparations illustrating the characteristics of poisonous and edible mushrooms common to the United States; illustrations displaying the varied character of the starch granules of plants; drawings and illustrations explaining method of distinguishing vegetable and animal fibres, their kind and quality; drawings displaying vegetable and animal cellulose and starches, and illustrating methods of detecting them in organizations.

**CHEMICAL DIVISION.**

Fertilizers.—Mineral—including phos-

## Horticulture, Animals, Fish, Ethnology.

phates, apatite, coprolites, and all minerals and materials yielding potash, etc.; vegetable—muck, peat, sea-weed, and other products of vegetable decomposition; animal—including guanos, bones, refuse from abattoirs, fisheries, oil manufactures, cancerine, etc.; agricultural products and materials obtained by chemical processes from flour, meal, bran, hominy; methods of preserving, etc., with special products of manufacture, viz.: starch, dextrine, sago, sugars, gums, glucose; products obtained by fermentation: wine, beer, ale, etc.; products of acetous fermentations;

tanning materials of the United States: barks, leaves; tanning solutions, with modes of manufacture; dyes of the United States; resins and products of distillation of resinous materials; oils, vegetable, fixed, and others; products of milk, classified according to methods of production.

**HORTICULTURAL DIVISION.**

Specimens of economic and utilizable plants, showing methods of growth, culture, etc., grapes, cotton, tobacco, flax, broom corn, jute, corn, sorghum, yucca fibres, etc.

**SMITHSONIAN INSTITUTION, (AND COMMISSION ON AMERICAN FOOD FISHES.**

The Smithsonian Institution makes the following exhibits:

**Publications of the Institution.**

Smithsonian contributions to knowledge; miscellaneous collections; annual reports, and other publications.

Meteorological work of the Institution: Charts showing the mean temperature, rainfall, and barometric pressure of the United States.

International exchanges; statistics of number of correspondents; extent of distribution by exchange.

General condition; financial statement.

**COLLECTION TO ILLUSTRATE THE ANIMAL RESOURCES OF THE UNITED STATES.**

IN CHARGE OF G. BROWNE GOODE.

**Animals Beneficial or Injurious to Man**—Mammals; birds; reptiles; amphibians; fishes; elasmobranchiates; marsipobranchiates; lepto-cardians; insects; arachnids; crustaceans; worms; mollusks; radiates; protozoans and marine products not of animal nature.

**Means of Pursuit and Capture.**—Hand-implements; implements for seizure of objects; missiles; baited hooks; angling tackle; nets, and traps.

**Apparatus for Wholesale Destruction.**—Hunting animals; decoys and disguises; pursuit—its methods and appliances.

**Means of Utilization.**—Preparation and preservation of foods; manufacture of textile fabrics, felts and stuffings; preparation of the skin and its appendages; the hard materials; oils, glues, drugs, perfumes, chemical products, fertilizers and lime; preservation of the animal for scientific uses.

**Animal Products and their Applications.**—Food; clothing; materials employed in the arts and manufactures.

**Protection and Culture of Useful Animals.**—Investigation; protection, and propagation.

**COLLECTION TO ILLUSTRATE THE FISHERY RESOURCES OF THE UNITED STATES.**

This is covered to a considerable extent by the preceding group, in connection with which it is arranged. The special features will embrace the following:

Fishing vessels, boats, etc., life size and models.

The apparatus and dories used in the whale fisheries.

Nets, traps, and pounds.

Hooks, lines, baits, etc.

Casts, photographs, and drawings of fish and other aquatic animals.

Prepared or living specimens of aquatic animals.

Products of the waters.

Economical applications of the above products.

**E.—COLLECTION TO ILLUSTRATE THE ETHNOLOGY OF THE UNITED STATES.**

IN CHARGE OF DR. CHARLES RAW.

(This exhibition is made conjointly with the Indian Bureau of the Interior Department.)

**Objects of Stone.**

Flaked and chipped stone; raw material (pieces of flint, etc.); flakes and cores of flint, obsidian, etc.; rude or unfinished implements; arrow and spear heads; perforators and scrapers; cutting and sawing implements; dagger-shaped implements; leaf-shaped implements; digging implements, and wedge or celt-shaped implements.

Pecked, ground, and polished stone; wedges or celts; chisels; gouges; adzes; grooved axes; hammers; ceremonial weapons; cutting tools; scraper and spade-like implements; pendants and sinkers; discoidal stones, etc.; pierced tablets and boat-shaped objects; grinding and polishing stones; stone vessels; mortars; pestles; tubes; pipes; ornaments, and sculptures.

**Objects of Copper.**

Implements and ornaments.

**Objects of Bone.**

Implements, weapons, and ornaments.

**Objects of Shell.**

Utensils, implements, and ornaments.

**Objects of Clay.**

Mound pottery and terra-cottas.

**Objects of Wood.**

Fragmentary objects and carvings of an early date.

**Ethnological Series.**

*Man.*—Skulls, mummies, etc.

*Culture.*—Aliments, food (mineral and vegetable), drinks, narcotics, and medicines.

*Habitations.*—Models of houses, tents, etc., and appurtenances.

*Furniture.*—Cradle boards, mats, etc.

Vessels and other utensils of household use.—Earthenware; carved horn and wooden ware; stone ware; wicker work; bladders and boxes.

Utensils for smoking, etc.—Pipes; tobacco pouches; snuff apparatus, etc.

Receptacles used as means of transportation.—Pouches, bags, raw-hide cases, burden-nets, etc.



## Ethnology, Minerals.

**Clothing.**—Raw material; complete suits; head, body, hand, leg, and foot clothing; parts of dress.

**Personal adornment.**—Skin ornamentation; head, neck, breast, body, and limb ornaments; toilet articles.

**Implementations of general use of war and the chase, and of special crafts.**—Implements for cutting, drilling, etc.; lances, bows and arrows, clubs, tomahawks, etc.; shields, body armor, etc.; implements for fire-making, arrow-making, pottery, for procuring and manufacturing food; agricultural implements; implements used in spinning, weaving, sewing, and embroidery.

**Means of locomotion and transportation.**—Snow shoes, ice creepers, etc.; balsas, dug-outs, bark canoes, hide boats, etc.; saddles, bridles, halters, harness, etc.; sleighs, etc.

**Games and pastimes.**—Gambling implements; masks, etc., used in dancing; rackets, balls, etc.; toys.

**Music.**—Drums, rattles, whistles, flutes, etc.

**Art.**—Pictorial representations and carvings.

**Superstition.**—Charms, mythological figures, etc.

## COLLECTION TO ILLUSTRATE THE MINERAL RESOURCES OF THE UNITED STATES.

IN CHARGE OF W. P. BLAKE.

The principal objects of this collection of the useful ores and minerals of the country have been to illustrate: 1st. The nature and variety of the mineral resources of the United States; 2d. The geographical distribution and geological associations of the minerals; 3d. The extent to which they have been utilized; 4th. The mechanical, metallurgical, and chemical processes by which they are extracted or converted into useful products; 5th. The inherent and comparative qualities of the extractive products. A portion of the collection is arranged according to the nature of the objects, irrespective of locality, but the bulk of the Exhibition is grouped geographically by States. There is also a section devoted to models and drawings, and one to geological maps and graphic charts. This collection occupies the northeast portion of the Government Building, upon the right of the main aisle.

### I. SYSTEMATIC SERIES, GROUPED IRRESPECTIVE OF LOCALITY, IN THE FOLLOWING ORDER:

- a Crystalline minerals, chiefly for scientific and educational purposes.
- b Fuels and petroleum.
- c Ores, metals, and their immediate derivatives.
- d Ornamental stones and gems.
- e Building stones; marbles, etc.
- f Artificial stones; lime; mortars; cement.
- g Fictile materials and direct products, including refractory materials, etc.
- h Pigments; colors; detergents.
- i Grinding, abrading, and polishing substances.
- k Fertilizing substances.
- l Sulphur, salts, and minerals chiefly used in chemical manufactures.

### II. ORES, MINERALS, AND METALLURGICAL PRODUCTS, GROUPED BY STATES.

**Maine.**—Iron ores, limestone and pig iron; granite for buildings and monuments.

**New Hampshire.**—Granitic and metamorphosed rocks; granite; geological map of the State.

**Vermont.**—Marble; slate of various colors; roofing slate, etc.; iron ores and limonite; chilling pig iron; spiegeleisen; kaolin and fire brick; sand for glass making; copper ores, copper, and metallurgical products; scythe stones.

**Massachusetts.**—Iron ore, siderite; magnetic iron ore, and steel produced from it; iron and steel wire; emery, massive and associate; corundum, corundophyllite, diaspore, red oxide of titanium, and ilmenite; argentiferous lead ore, galenite; copper ore; syenite and porphyry; porphyry, a series of polished specimens; granite; sand for glass making; glass, cut and pressed; pearl ash and red lead; kaolin; potters' clay, brick clay, etc.; potters', paper, and alum clay; marble and limestone; geological map of the State.

**Rhode Island.**—Granite, for building and monumental purposes; magnetite; anthracite and graphitic coal, in large mass and in lumps.

**Connecticut.**—Granite and building stone; marble and limestone; serpentine marble, verd antique; barytes (sulphate of barytes); kaolin, brick clay, and products; iron ores, limonite, etc.; pig iron; iron ore, spathic and associates; cement steel; mining picks and hammers; copper and alloys, nickel silver, etc.; feldspar, silice, etc., for pottery purposes; geological map of the State.

**New York.**—Magnetic iron ores, building stones, etc.; fluxes, fuels, and iron; Bessemer steel; hematite, magnetite, etc.; malleable cast iron; puddled iron and muck bar; limestone and lime; hydraulic limestone, hydraulic cement, and cement drain-pipe; kaolin, crude and washed; "incombustible mineral wool," or nitrous fibre "slag felting;" lead and tin foil; fire clay and fire clay goods, refractory materials, etc.

**New Jersey.**—Magnetic iron ores; iron ore; massive and granular willemite; zinc ores and franklinite; zinc; spiegel iron, "franklinite iron"; calamine (silicate of zinc); potters' and brick clay and iron-stone china ware; refractory furnace materials, fire brick, etc.; fire-brick clay and fire brick, etc.

**Pennsylvania.**—Iron ore, flux, and fuel; coal and coke; kaolin; limestone; iron ores, limonite, specular iron, etc.; copper ores; copper and copper products; petroleum and petroleum products; glass, and materials for its manufacture; window glass and materials; pig iron and ores; nickel and cobalt ores and products; cast steel; sheet iron; chromite.

**Maryland.**—Iron ore, flux, and fuel.

**Virginia.**—Zinc ores, calamine; lead ores, galena, cerussite, etc.; gypsum; barytes; kaolin; iron ores, magnetite, hematite, limonite, and fossil ore; coal and coke; copper ores; salt brine, fossil salt, and prepared salt; gold-bearing quartz; manganese; granite.

**West Virginia.**—Bituminous coal; coke; iron ores, black band, brown hematite, and fossil ores.

**North Carolina.**—Gold and silver ores; copper ores; marble; corundum and the associate minerals; iron ores and iron; muscovite (mica); geological map of North Carolina.

**South Carolina.**—Phosphatic fossils, mineral fertilizers, etc.; minerals and ores.

**Alabama.**—Ores and coal; spiegeleisen and ores; geological map of Alabama.

## Minerals, Geological Maps and Publications

**Tennessee.**—Iron ores, coal and mineral products; copper pyrites and vein stone; refined copper; geological map of Tennessee.

**Georgia.**—Auriferous gravel; gold-bearing quartz, etc.

**Kentucky.**—A series of specimens illustrating the mineral resources of the State.

**Louisiana.**—Rock salt; sulphur.

**Ohio.**—Open hearth steel; iron ores, flux and fuel; pig iron; potters' clay and pottery; crude and manufactured plaster; building stone.

**Indiana.**—Specimens of block coal, and iron ores; potters' clay; "Indianite."

**Missouri.**—Lead ores, galena, cerussite; etc.; pig lead; zinc ores; barytes, associated with lead ores; marble, limestone, and granite; iron ores, magnetite, specular iron, hematite; pig iron; copper ore; coal and coke; fossil plants, etc.; porphyry.

**Michigan.**—Iron ores, flux, and Bessemer pig iron; specular and magnetic; native copper, crystallized; mass and stamp work, with silver and associate minerals, and in amygdaloid and "ash bed;" building stone;

native silver; copper and "copper conglomerate."

**Colorado.**—Gold and silver ores; gold, and ores containing tellurium; silver and copper ore.

**Utah.**—Silver ores.

**Idaho.**—Gold and silver ores.

**Montana.**—Silver ores; argentiferous galena.

**Arizona.**—Copper ores; gold quartz, and other minerals.

**Nevada.**—Silver and gold ores.

**California.**—Gold and silver ores; auriferous gravel, "cement" with gold; quicksilver ores, cinnabar and native quicksilver; copper ores; tin ores and tin.

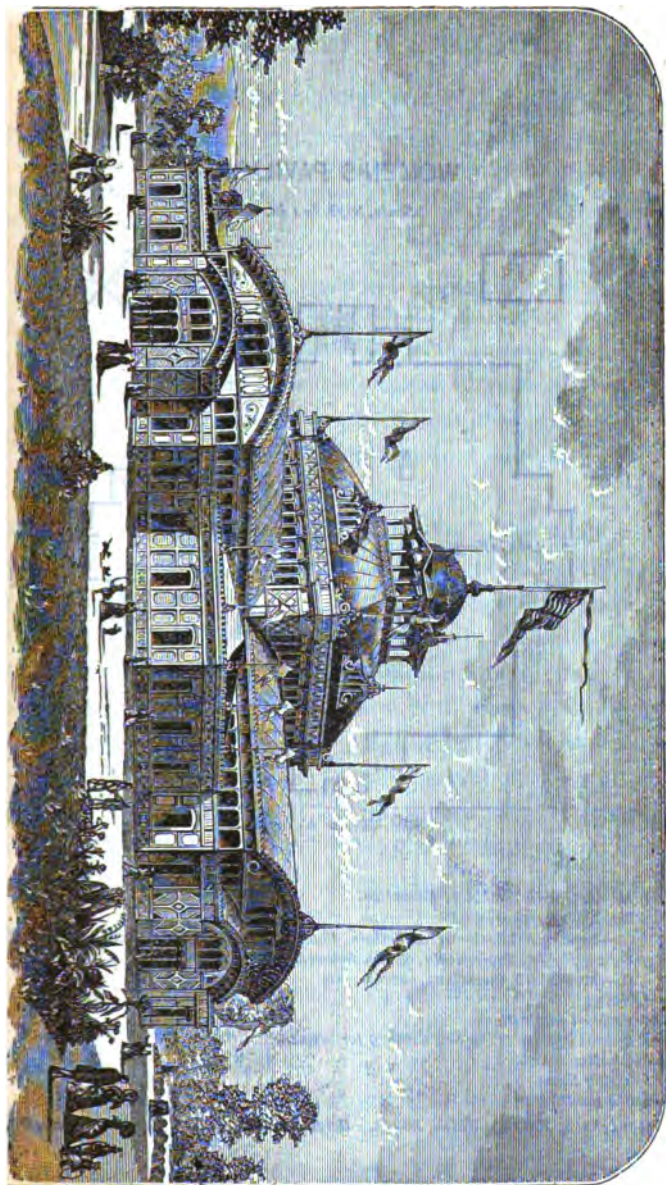
## III. MODELS AND DRAWINGS.

## IV. GEOLOGICAL MAPS AND GRAPHIC CHARTS.

**Geological Map of the United States and Territories.**

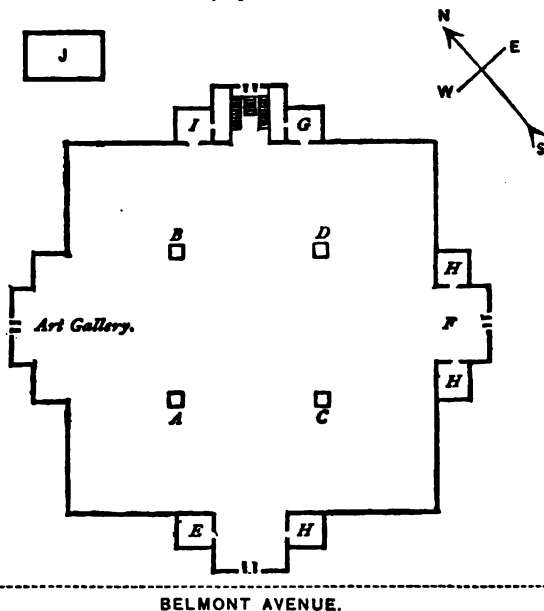
**Geological and other Maps of the State of New Hampshire.**

**Geological Reports and Publications.**



## WOMEN'S PAVILION.

*Scale, 80 ft. to 1 in.*



Section A.—*Art, Industrial Art, Education.*

" B.—*Manufactures, etc.*

" C.—*Foreign Exhibits—Great Britain, Canada, Brazil, Norway, Sweden, Japan, France, Egypt, Tunis, Italy, Spain, Netherlands.*

" D.—*Needlework, inventions, patents, etc.*

E.—*Library.*

F.—*Benevolent Institutions.*

G.—*Editorial Office of "The New Century for Women."*

H.—*Committee Rooms.*

I.—*Dressing Room.*

J.—*Kindergarten.*

*Total Length, 208 ft. Width, 208 ft. Height of Nave, 41 ft. Height of Dome, 67 ft.*

No. 153. WOMEN'S PAVILION.

Architect, H. J. SCHWARZMANN.—Size, 26,368 square feet.

THIS pavilion was erected by money raised through the exertions of the women of the United States, and is devoted exclusively to the results of women's labor. It is built of wood, and is situated on Belmont avenue, adjacent to the Horticultural grounds.

OFFICERS AND MEMBERS OF THE WOMEN'S CENTENNIAL  
EXECUTIVE COMMITTEE.

*President*, MRS. E. D. GILLESPIE, Philadelphia.

*Vice-President*, MRS. JOHN SANDERS, Philadelphia.

*Secretary*, MRS. RICHARD P. WHITE, Philadelphia.

*Treasurer*, MRS. FRANK M. ETTING, Philadelphia.

*Members.*

MRS. JOHN W. FORNEY, Philadelphia.

MRS. RICHARD P. WHITE, Philadelphia.

MRS. HENRY COHEN, Philadelphia.

MRS. AUBREY H. SMITH, Philadelphia.

MRS. MATTHEW SIMPSON, Philadelphia.

MRS. EMILY R. BUCKMAN, Philadelphia.

MRS. A. H. FRANCISCUS, Philadelphia.

MISS ELIZABETH GRATZ, Philadelphia.

MISS MCHENRY, Philadelphia.

MRS. CRAWFORD ARNOLD, Philada.

MRS. H. C. TOWNSEND, Philadelphia.

MRS. JOHN PENN BROCK, Philadelphia.

MRS. THEODORE CUYLER, Philadelphia.

MRS. ROBERT K. WRIGHT, Philadelphia.

MRS. L. C. HUGHES, Arizona.

MRS. FRED. MACCRELLISH, California.

MRS. M. E. P. BOULIGNY, Dist. of Col.

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- 36 Tremper, Miss Marietta, New York, N. Y.—Window-washing machine. Sec. D. 225
- 37 Colvin, Margaret P., Battle Creek, Mich.—Triumph rotary washing machine, combining three principles: 1st, forcing steam through the goods—a powerful detergent; 2d, revolving in hot suds, with a constant change of position; 3d, the alternate elevation and falling of the goods is equivalent to light pounding. This machine is the successful result of years of experiment by a practical woman, to accomplish the perfect cleansing of all fabrics, from carpets to laces, without rubbing. With this machine, a child of twelve years can do more work, and do it better, than two women by ordinary methods. Sec. D.
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- 530 Shellman, Miss Mary B., Westminster, Ind.—Moss and stone picture of church and graveyard. Sec. B. 454
- 531 Roberts, Jennie M., Chicago, Ill.—Hair wreath, flowers and fruit. Sec. B. 454

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- 565 Graves, Miss L., New Haven, Conn.—Painted candles. Sec. B. 454
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- 574 White, Mrs. L. S., Philadelphia, Pa.—The manufacture of confectionery. Sec. B. 582

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- 577 Janvier, Mrs. Mary R., Sabathu, India.—Lammergeir, or bearded vulture. Sec. B. 635

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- 578 Lovejoy, Mrs. Carrie P., Columbus, O.—Preserved fern leaves. Sec. B. 709
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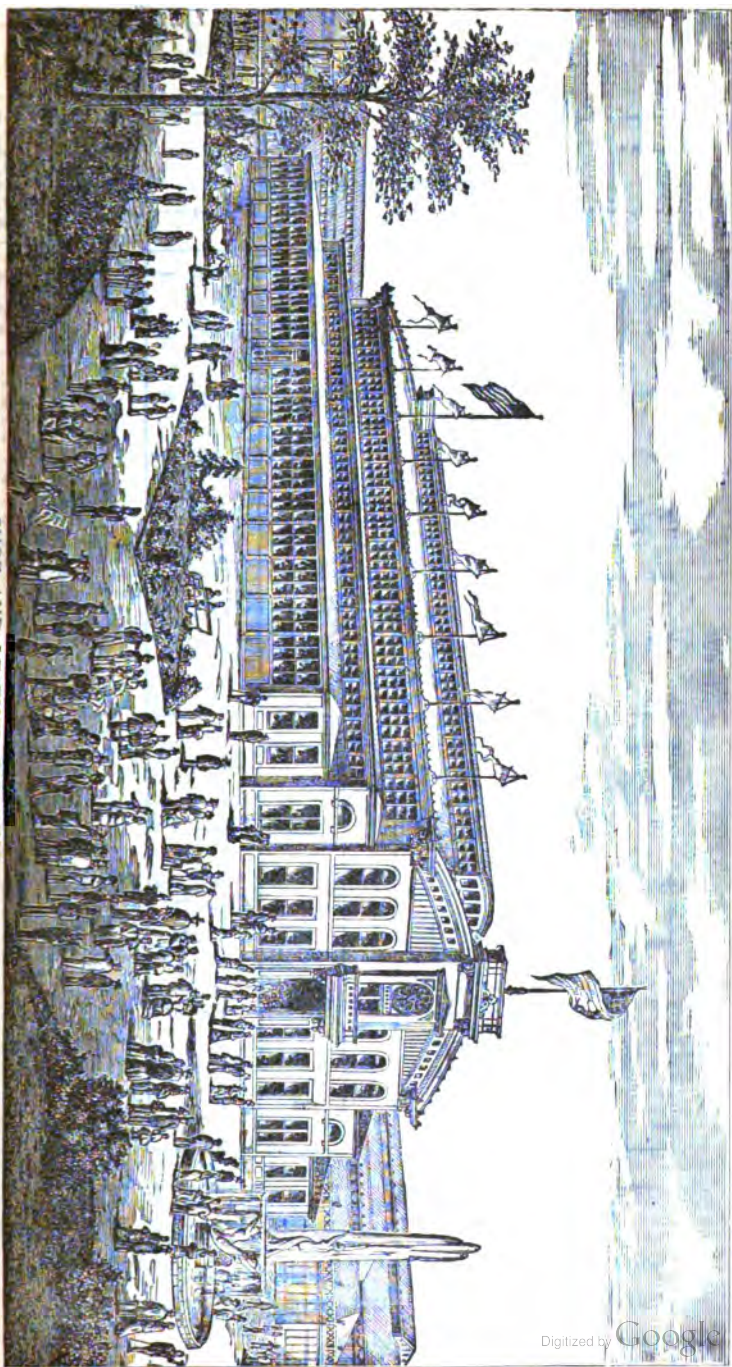
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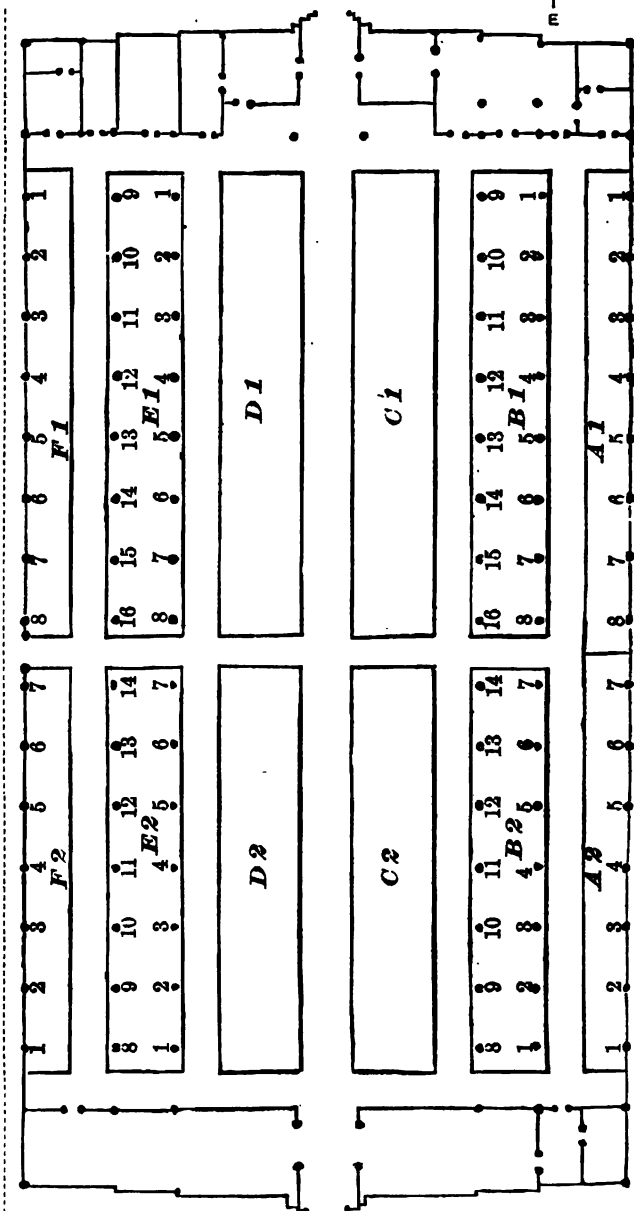
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SHOE AND LEATHER BUILDING.

ELM AVENUE.



SHOE AND LEATHER BUILDING.—GROUND PLAN.



## SHOE AND LEATHER BUILDING. No. 7.

Architect, A. B. BARRY.—Size, 314 feet by 160 feet.

The building is constructed of wood, two stories high, and is situated on Elm Avenue, south of Machinery Hall. Its name indicates its purpose.

## KEY TO THE NOTATION.

THE location of objects in the Shoe and Leather Building is shown by a letter and two figures, indicating the nearest column of the building. The letter and first figure designate the section of the building, the second figure the column within that section. The system of numbering is shown on the annexed ground plan.

The class of the classification (See Part I., pages 27-45) to which each exhibit belongs is indicated by the small figures at the end of the line.

## Oils, Leather Dressing.

## Oils and Leather Dressing.

- |     |   |     |
|-----|---|-----|
| 1   | Dodd, A. W., & Co., Gloucester, Mass.—Oils for tanners' use. F 1-3.   | 201 |
| 1a  | Hyde Bros., & Swift, New York, N. Y.—Tanners' oils. A 2-1.  | 201 |
| 1b  | Brown, B. F. & Co., Boston, Mass.—Shoe blacking, leather dressing and bronzes. F 1-3.   | 202 |
| 1c  | Cole, W. D., Ashland, Mass.—Belt and hose stuffing. A 2-3.  | 202 |
| 2   | Miller, Frank, Son, & Co., New York, N. Y.—F 1-4.   |     |
| a   | Harness oils.   | 201 |
| b   | Shoe blacking, leather dressings, etc.  | 202 |
| 2a  | Stump, F., & Co., Philadelphia, Pa.—Blacking, polishing and burnishing inks. A 2-1.   | 202 |
| 2b  | Boyer, W. P., & Co., Philadelphia, Pa.—Shoe blacking. F 1-2.  | 202 |
| 2c  | Hausler, John, Philadelphia, Pa.—Shoe blacking. F 1-2.  | 202 |
| 2d  | Fletcher & Dwyer, Lynn, Mass.—Burnishers for finishing edges and heels of boots and shoes. D 1-6.   | 202 |
| 2e  | Bartlett, H. A., & Co., Philadelphia, Pa.—Shoe blacking. F 1-1.   | 202 |
| 3   | Levi & Berg, Philadelphia, Pa.—Shoe blacking and ladies' shoe dressing. F 1-3.  | 202 |
| 4   | Annear, John, Philadelphia, Pa.—Shoe blacking and stove polish. F 1-2.  | 202 |
| 5   | Mason, Jas. S., & Co., Philadelphia, Pa.—Shoe blacking. F 1-5.  | 202 |
| 7   | Bixby, S. M., & Co., New York, N. Y.—Shoe blacking and leather dressing. F 1-4.   | 202 |
| 8   | Restorff & Bettmann, New York, N. Y.—Leather polish for boots, shoes, traveling bags, etc. B 2-2.   | 202 |
| 9   | Sawyer, H., Boston, Mass.—Crysal blue. F 1-3.   | 202 |
| 10  | Reed, Geo. H., & Sons, Boston, Mass.—Dressings, inks, varnishes, and stains for leather. F 1-3.   | 202 |
| 11  | Hauthaway, C. L., & Sons, Boston, Mass.—Leather dressings, blackings, stains, and varnishes. These goods are favorably known throughout the United States, Canadas, and Europe, and were awarded medals at Boston and Vienna. Visitors at the Shoe and Leather Building will see upon the various exhibits of boots, shoes, harness, and horse collars, specimens of the high finish derived by the use of our dressings, as many of the best goods there are finished with our articles. They are considered indispensable in all manufacturing factories using leather. Our exhibit consists of twenty-one different articles adapted to leather, all of our own invention and production. House established in 1854. E 1-11. | 202 |
| 11a | Connihan, E., & Co., Charlestown, Mass.—Water proof leather preservative. F 1-3.  | 202 |

For classes of exhibits, numbered at end of entries, see Classification, Part I., pp. 27-45.

## Boots and Shoes.

## Boots and Shoes.

- 12 Johnson, N. M., St. Louis, Mo.—Boots and shoes. C 2-11. 251
- 13 Wells, M. D., & Co., Chicago, Ill.—Boots and shoes. C-14. 251
- 14 Fargo, C. H., & Co., Chicago, Ill.—Women's, misses', and children's shoes; men's boots. C 2-11. 251
- 15 Falley, L., & Co., Lafayette, Ind.—Men's, boys', and women's calf and kip boots and shoes. C 1-15. 251
- 16 Knees, Chas., Frederick, Md.—Cordovan leather patterns for boots and shoes. D 1-8. 251
- 17 Semenetz, Rudolf, Cleveland, O.—English top boots. D 2-4. 251
- 18 Stribley & Co., Cincinnati, O.—Ladies', misses', and children's shoes. C 2-12. 251
- 18a Davis, Whitcomb, & Co., Boston, Mass.—Seamless felt shoes. D 1-4. 251
- 18b Graves, Ball, & Co., Albany, N. Y.—Shoe lasts. D 2-7. 251
- 18c Ransom, W. A., & Co., New York, N. Y.—Men's, women's, misses', and children's sewed, nailed, and pegged shoes and gaiters. D 2-5. 251
- 18d Keene Bros., Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 18e Valpey & Anthony, Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 18f Bartlett & Doak, Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 18g Boynton & Bancroft, Lynn, Mass.—Women's, misses', and children's soles. D 1-7-8. 251
- 18h Mower, E. W. & C. F., Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 18i Bubier, S. M., & Sons, Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 18j Bacheller, C. H., & Co., Lynn, Mass.—Women's, misses', and children's boots and shoes. D 1-7-8. 251
- 19 Hocker, Geo., Cincinnati, O.—Ladies' and gentlemen's boots and shoes. C 2-13. 251
- 20 Kilsheimer, F., Cincinnati, O.—Men's boots, shoes, and gaiters. C 2-13. 251
- 21 Prichard, Smith, & Co., Cincinnati, O.—Boots and shoes. C 2-12. 251
- 22 Alter, Frank & Co., Cincinnati, O.—Boots and shoes. C 2-12. 251
- 23 Cincinnati Shoe Manufacturing Co., Cincinnati, O.—Ladies', misses', and children's boots and shoes. C 2-11. 251
- 24 Feary, Thos., & Sons, Albany, N. Y.—Ladies', misses', children's, and infants' shoes. C 2-11. 251
- 25 East New York Boot, Shoe, & Leather Manufacturing Co., Albany, N. Y.—Women's, misses', and children's shoes. C 2-13. 251
- 26 Newcomb & Walker, Elmira, N. Y.—Men's, boys', youths', women's, misses', and children's shoes. C 1-14. 251
- 27 Burt, Edwin C., New York, N. Y.—Ladies' shoes. C 2-14. 251
- 28 Burt & Mearns, New York, N. Y.—Men's boots and shoes. C 2-14. 251
- 28a Dress Reform Co., Boston, Mass.—Designs for ladies' shoes. D 1-6. 251
- 29 Bay State Shoe & Leather Co., New York, N. Y.—Boots and shoes. C 2-14. 251
- 30 Thierry, Ernest J., New York, N. Y.—Gentlemen's gaiters, shoes, and slippers. C 2-14. 251
- 31 Brooks, Edwin A., New York, N. Y.—Cork-sole boots and shoes. C 2-13. 251
- 32 Creed, Eugene, New York, N. Y.—Boot, shoe, and gaiter uppers. C 1-15. 251
- 33 Kenny & McPartland, New York, N. Y.—Ladies', misses', and children's shoes. D 1-5. 251
- 34 Leh, H., & Co., Allentown, Pa.—Boots and shoes. D 2-4. 251
- 35 Adler & Clement, Baltimore, Md.—Ladies', misses', and children's shoes; leather tips formed from the sole. D 1-4. 251
- 36 Dixon, W. T., & Bro., Baltimore, Md.—Ladies', misses', and children's shoes. D 1-2. 251
- 37 Banister & Tichenor, Newark, N. J.—Men's and boys' boots, shoes, and slippers. Fin. st. class hand and machine-sewed. Any of the goods on exhibition duplicated on orders. D 2-4. 251
- 38 Canfield, M. B. & I., Newark, N. J.—Gentlemen's boots and shoes. D 2-5. 251
- 39 Miller, McCullogh, & Ober, Newark, N. J.—Gents' boots and shoes. D 2-4. 251
- 40 Brown, Alex. P., & Co., Philadelphia, Pa.—Ladies', misses', children's, and infants' boots and shoes. C 1-15. 251
- 41 Evans, Thos. R., 28 South Fourth street, Philadelphia, Pa.—"Evans's American gaiter," and graduated expanding boots and shoes. Patented. D 2-5. 251
- 42 Jenkins Bros. & Co., South Abington, Mass.—Steel shanks for boots and shoes. C 1-15. 251
- 43 Erskine, M. A., & Co., Philadelphia, Pa.—Ladies' shoes. C 1-12. 251
- 44 Graf, L., & Bro., Newark, N. J.—Boots and shoes. C 1-13. 251
- 45 West Bros., Philadelphia, Pa.—Ladies', misses', children's, and infants' shoes. C 1-13. 251
- 45a Moore, Wm. B., Camden, N. J.—Metal tips for shoes, corsets, etc. D 1-4. 251
- 45b Barrows & Boyd, New York, N. Y.—Ladies' and children's fine shoes. D 2-5. 251
- 45c Shaw, Chas. A., Boston, Mass.—Improved shoe lasts. D 1-5. 251
- 45d Prouty, Isaac, & Co., Spencer, Mass.—Men's, boys', and youths' boots. D 1-3. 251
- 45e Kent, Edward E., & Co., Spencer, Mass.—Men's, boys', and youths' boots. D 2-7. 251
- 45f Cooper, R., Ithaca, N. Y.—Centennial shoe. D 1-5. 251

## Boots and Shoes.

- 46 Gates, Allen, & Bro., 413 Dillwyn streets, Philadelphia, Pa.—Ladies' machine-sewed turn boots, shoes, and slippers. Warranted equal in quality and workmanship to hand-made shoes. C 1-14. 251
- 47 Sollers, S. D., & Co., Philadelphia, Pa.—Infants' and children's shoes and slippers. C 1-14. 251
- 48 Richelderfer, J. H., Philadelphia, Pa.—Over gaiters and leggings. C 1-13. 251
- 49 Kelley & Moore, Philadelphia, Pa.—Ladies' shoes. C 1-12. 251
- 50 Targett, John, Philadelphia, Pa.—Boot, shoe, and gaiter patterns. C 1-12. 251
- 50a Claffin, Waldo M., Philadelphia, Pa.—Men's and boys' boots and shoes, with Estabrook, Wirs, & Co. screws. C 1-12. 251
- 50b Pratt, Henry J., Abington, Mass.—Last-block fastening. D 1-6. 251
- 50c Butterfield, Wm., & Co., New York, N. Y.—Button fastener, and plate-lace hook. D 1-6. 251
- 50d Phinney, S. C. & J. G., Stoughton, Mass.—Boot and shoe counters, made of sole leather. D 2-4. 251
- 51 Schmid, Jacob, Philadelphia, Pa.—Ladies' boots and shoes. C 1-12. 251
- 52 Benkert, C., & Son, Philadelphia, Pa.—Gentlemen's boots and shoes. C 1-16. 251
- 53 Zaun, Jacob, & Son, Philadelphia, Pa.—Men's boots and shoes. C 1-13. 251
- 54 Dreisbach, Wm., & Co., Philadelphia, Pa.—Shoe bows and wooden heels. C 1-15. 251
- 55 Heulings, Abram, American Hotel, Chestnut street, opposite Independence Hall, Philadelphia, Pa.—Ice creepers which can be attached to any lady's or gentleman's boot or shoe, and worn alike in the parlor or on icy sidewalks. C 1-15. 251
- 56 Meyer, C. Adolph, Philadelphia, Pa.—French calf boots, shoes, and gaiters. C 1-12. 251
- 57 Helweg & Co., Philadelphia, Pa.—Boots and shoes. C 1-16. 251
- 59 Mayer & Stern, Philadelphia, Pa.—Ladies', children's, and infants' shoes. C 1-12. 251
- 60 Dalsheimer Bros., Philadelphia, Pa.—Ladies', misses', children's, and infants' shoes. C 1-15. 251
- 61 Sausser, Dangler, & Co., Philadelphia, Pa.—Women's, misses', and children's shoes. C 1-13. 251
- 62 Ziegler Bros., Philadelphia, Pa.—Ladies', misses', children's, and infants' shoes. C 1-14. 251
- 63 Laird, Schober, & Mitchell, Philadelphia, Pa.—Boots and shoes. C 1-15. 251
- 64 Schiff, W. L., Philadelphia, Pa.—Children's shoes, and ladies' white kid boots and slippers. C 1-15. 251
- 64a Claffin, Aaron, & Co., New York, N. Y.—Wax, grain, split, kip, and calf boots, brogans, etc. D 1-2. 251
- 64b Gittens, J. K., Brooklyn, N. Y.—Cork and wool insoles. C 2-13. 251
- 64c Saller, Lewin, & Co., Philadelphia, Pa.—Men's, boys', women's, and misses' boots and shoes. C 1-13. 251
- 64d De Haven, A. R., & Son, Philadelphia, Pa.—Ladies' hand-sewed boots and shoes. C 1-12. 251
- 64e Fontyn, George, Philadelphia, Pa.—Men's boots, shoes, and gaiters. C 1-13. 251
- 64f Reimel, Louis, Philadelphia, Pa.—Sho. upper. C 1-14. 251
- 64g Gray Bros., Syracuse, N. Y.—Ladies' and misses' fine shoes. D 1-4. 251
- 65 Simonds, N. J., Woburn, Mass.—Bevel and moulded heel stiffenings from leather and leather boards. D 2-6. 251
- 66 Walker, J. H. & G. M., Worcester, Mass.—Boots. D 1-8. 251
- 67 Hamilton Web Co., Wickford, R. I.—Boot and gaiter webs. D 1-3. 251
- 68 Lilly, Young, Pratt, & Brackett, Boston, Mass.—Men's, boys', and youths' boots and shoes. D 1-3. 251
- 69 Connolly & Power, Boston, Mass.—Gentlemen's boots, shoes, and gaiters. D 2-6. 251
- 70 Haskell, B. C., & Dickerman, Boston, Mass.—Shoe findings, buckles, buttons, laces, button hooks, over gaiters, shoe trimmings, and tools. D 2-7. 251
- 70a Cushman, Ara, & Co., Auburn, Me.—Men's boots and shoes. D 2-7. 251
- 70b Henderson, C. M., Chicago, Ill.—Men's boots and shoes. D 2-4. 251
- 70c Krippendorf & Hart, Cincinnati, O.—Ladies', misses', and children's shoes. C 2-12. 251
- 70d American Novelty Shoe Co., Meadville, Pa.—Wooden shoes. D 2-4. 251
- 71 Jones, Frederick, & Co., Boston, Mass.—Boots and shoes. D 1-2. 251
- 72 Batcheller, E. & A. H., & Co., Boston, Mass.—Men's, boys', youths', women's, and misses' boots, shoes, and brogans. D 1-1. 251
- 72a De Waru, Laurens E., Philadelphia, Pa.—Boots and shoes showing the Gordian seam. D 1-3. 251
- 73 Henshaw, Ed., Boston, Mass.—Shoe findings, tools, store supplies, etc. D 2-7. 251
- 74 Aub, Hackenburg, & Co., Philadelphia, Pa.—Machine silk for leather work. D 1-5. 251
- 75 Jenkins, Lane & Sons, Boston, Mass.—Boots, shoes, and brogans. D 1-1. 251
- 76 Fogg, Houghton, & Coolidge, Boston, Mass.—Men's, boys', youths', women's, and children's boots and shoes. D 1-1. 251
- 77 Dane, J. F., Grinnell, & Co., Boston, Mass.—Men's boots, brogans, etc. D 1-3. 251
- 78 Robbins & Kelloggs, Boston, Mass.—Women's, misses', and children's shoes. D 1-3. 251

## Boots, Shoes, Trunks.

- 79** Emerson's, Thomas, Sons, Boston, Mass.—Men's, boys', and youths' shoes. Manufacturers of hand and machine fine sewed and nailed work; owners of the patent for the celebrated "Hersome Gaiter." D 1-1. 251
- 80** Sears & Warner, Boston, Mass.—Shoe manufacturers' goods, lastings, and serges. D 1-8. 251
- 81** Peckert, Charles D., & Co., Lynn, Mass.—Ladies' and misses' boots and shoes. D 1-7. 251
- 82** Ventilating Waterproof Shoe Co., Lynn, Mass.—Ladies' and misses' boots. D 1-7. 251
- 83** The Moulded Heel Stiffening Co., Lynn, Mass.—Moulded rubber counters for boots and shoes. D 1-7. 251
- 83a** Wood, W. D., & Co., Haverhill, Mass.—Boot and shoe trimmings. D 1-6. 251
- 83b** Emerson, R. W., & Co., Boston, Mass.—Women's, misses', and children's pegged boots and shoes. D 1-1. 251
- 83c** Mawhinney, H. H., & Co., Boston, Mass.—Boots and shoes. D 1-4. 251
- 83d** Shaw, John, 2d, & Bro., Lynn, Mass.—Women's boots and shoes. D 1-7. 251
- 84** Tebbetts, Charles B., Lynn, Mass.—Ladies' and gents' boots, shoes, slippers, and fancy ties. D 1-7. 251
- 85** Woolredge, A. M., Lynn, Mass.—Ladies' shoes. D 1-7. 251
- 88** Bancroft, E. F., & Co., Lynn, Mass.—Ladies' and misses' boots and shoes, and ladies' and gents' fancy and plain slippers. D 1-7. 251
- 87** Mower & Bro., Lynn, Mass.—Ladies' and misses' boots and buskins. D 1-7. 251
- 88** Sweetzer, C. S., & Co., Lynn, Mass.—Ladies' and misses' boots. D 1-7. 251
- 89** Breed, W. F., Dole, & Co., Lynn, Mass.—Ladies' and misses' boots. D 1-7. 251
- 90** Breed, F. W., Lynn, Mass.—Ladies' boots and shoes. D 1-7. 251
- 91** Breed, A. F., Lynn, Mass.—Men's, ladies', and misses' boots and shoes. D 1-7. 251
- 92** Coffin, C. A., & Co., Lynn, Mass.—Men's boots and shoes. D 1-7. 251
- 93** Mudge, W. R., Lynn, Mass.—Leather, straw, and pattern boards, paper soles, stiffenings, etc. D 1-6. 251
- 94** Sutherland, I. G., Lynn, Mass.—Boot and shoe patterns, and sample boots and shoes. D 1-6. 251
- 95** Buffam, Charles, Lynn, Mass.—Ladies' and misses' boots. D 1-7. 251
- 95a** Rogers, Evan T., San José, Cal.—Seamless gaiters and shoes. D 1-5. 251
- 95b** Boynton & Bancroft, Lynn, Mass.—Shoe soles, sole leather and roundings. D 1-7. 251
- 95c** Dawley & Derby, New York, N.Y.—Shoe lasts, boot trees, crimps, clamps, toe stretchers. D 2-4. 251
- 95d** Reutzel, P. J., New York, N.Y.—Boot, shoe, and gaiter uppers. D 1-4. 251
- 95e** National Boot & Shoe Tip Co., Boston, Mass.—Colored rawhide tips and toe protectors. D 1-2. 251
- 95f** Dalsheimer, Leon, & Bro., Camden, N. J.—Boots and shoes. C-13
- 96** Mower, F. B., Lynn, Mass.—Ladies', misses', and children's boots. D 1-7. 251
- 97** Ordway & Clark, Haverhill, Mass.—Ladies' and gents' walking boots and slippers. D 1-6. 251
- 98** How, Moses, Haverhill, Mass.—Ladies' and misses' shoes and slippers. D 1-5. 251
- 98a** Oliver, Stephen, jr., Lynn, Mass.—Women's boots and shoes. D 1-7. 251
- 98b** Morgan & Dore, Lynn, Mass.—Ladies' boots and shoes. D 1-7. 251
- 98c** Hawkins, Theo. H., Vineland, N.J.—Ladies', misses', and children's boots and shoes. D 1-5. 251
- 98d** Turnbull & Samuels, Philadelphia, Pa.—Composition heel. D 2-5. 251
- 98e** Justh, E. L., Washington, D. C.—Improved shoes. C 1-15. 251
- 99** Goodrich & Whitehouse, Haverhill, Mass.—Misses', children's, and infants' boots and shoes. D 1-6. 251
- 100** Goodrich & Porter, Haverhill, Mass.—Ladies' and misses' boots and shoes. D 1-5. 251
- 101** How, George C., Haverhill, Mass.—Kid slippers and ties. D 1-6. 251
- 102** Gardner Bros., Haverhill, Mass.—Ladies' and misses' boots and shoes. D 1-5. 251
- 103** Farrar, John B., Haverhill, Mass.—Gents' boots and opera and low-cut shoes. D 1-6. 251
- 104** Johnson, L., & Co., Haverhill, Mass.—Ladies' and gentlemen's shoes and slippers. D 1-6. 251
- 105** Nichols, George H., & Co., Haverhill, Mass.—Men's boots and shoes. D 1-6. 251
- 106** Goodrich, J., jr., Haverhill, Mass.—Ladies' boots. D 1-6. 251
- 106a** Parker, Charles F., & Co., Boston, Mass.—Boots and shoes. D 1-4. 251
- 106b** Dohle, Henry, Omaha, Neb.—Boots and shoes. D 2-3. 251
- 106c** American Wooden Shoe Co., Chicago, Ill.—Wooden shoes and slippers. 251
- 106d** Estabrook, Wires, & Co., Milford, Mass.—Climbing screws for boots and shoes. E 1-14. 251
- 106e** Foster & Quiggle, Milford, Mass.—Shoes made with Estabrook's clashing screws. E 1-14. 251

## Trunks, Valises, etc.

- 107** Simon, Edward, & Bro., New York, N. Y.—Trunks, bags, bag frames and trimmings, and fancy brass goods. G 2. 255

## Traveling Equipments, Harness, Rubber Goods.

- 108 Lagowitz, J., & Co., New York, N. Y.—Trunks, traveling bags, and satchels. G 2. 255
- 109 Hacker, J. C., & Co., New York, N. Y.—Pocket books, bill books, card and cigar cases, etc. G 2. 255
- 110 Lambert, P. W., & Co., New York, N. Y.—Pocket books, belts, toys, and Russia leather goods. C 1-16. 255
- 111 Gillmore, J. C., & Co., New York, N. Y.—Five trunks, traveling cases and bags. G 1. 255
- 112 Thorne, John W., New York, N. Y.—Saratoga trunk and trunk clasp. G 1. 255
- 112a Peddie, T. B., & Co., Newark, N. J.—Trunks, valises, traveling bags, and ladies' satchels. G 2. 255
- 112b Roemer, William, Newark, N. J.—Trunks, bags, and shawl straps. G 1. 255
- 112c Rowen, John, Philadelphia, Pa.—Trunks, satchels, and pocketbooks. G 1. 255
- 112d Doughty, S. H., New York, N. Y.—Ladies' belts. D 1-5. 255
- 113 Crouch & Fitzgerald, New York, N. Y.—Trunks, valises, shawl straps, and leather goods. G 2. 255
- 115 Simpson, J. F., Philadelphia, Pa.—Trunk closer, lock, strap, and socket. G 1. 255
- 116 Watt, F. H., Philadelphia, Pa.—Trunks, traveling bags, and fancy leather goods. G 2. 255
- 117 Unruh, John, & Sons, Philadelphia, Pa.—Leather trunks and valises. G 1. 255
- 118 Waas, H. A., Philadelphia, Pa.—Trunk. G 1. 255
- 119 Palmer, Lt. George H., Nashville, Tenn.—Army, sportsmen's, travelers', and miners' equipments, adopted by the United States Army. Part proprietorship in foreign patents for sale. Foreign orders solicited. G 1. 255

## Saddlery, Hardware.

- 120 Albright, Andrew, Newark, N. J.—Hard rubber-coated harness and carriage trimmings. D 2-2. 284
- 121 Celluloid Harness Trimming Co., Newark, N. J.—Celluloid martingale rings and harness mountings. D 2-1. 284
- 121a Osborn, H. F., Newark, N. J.—Saddlers' and harness-makers' tools and machinery. D 2-2. 284
- 122 Kuenhold, P. B., Newark, N. J.—Saddlery and coach hardware. D 2-2. 284
- 123 Crane & Co., Newark, N. J.—Flexible rubber bits, wrought hand-forged bits. D 2-2. 284
- 124 Theiberath, Charles M., & Bro., 10 and 12 Ward street, Newark, N. J.—Manufacturers of gold, silver, nickel-plated and leather covered harness mountings. D 2-3. 284
- 125 Manning, Robert, Newark, N. J.—Winkers and winker plates. D 2-1. 284

- 126 Buerman, August, Newark, N. J.—Saddlery and harness hardware, bits, spurs, etc. D 2-1. 284
- 127 Wiener & Co., Newark, N. J.—Saddlery, hardware, and trimmings. D 2-1. 284
- 128 Tompkins, Samuel E., & Co., Newark, N. J.—Tompkins' patent gig trees; coach pads and gig saddles; hames, bits, etc.; coach and saddlery hardware in silver, gold, or nickel. D 2-1. 284
- 129 Waldron, J. V., & Bro., New York, N. Y.—Crests, coats of arms, monograms, bits, bosses, rosettes, etc., for harness. D 2-1. 284
- 130 Reynolds, Samuel, & Co., Pittsburg, Pa.—Fine XC plate, silver plate, gold and japanned post bits, snaffle, ring bits and stirrups, iron gig and coach hames, all styles buckles, rings, loops, etc.; malleable iron castings for agricultural machinery. D 2-2. 284
- 131 Jenks, A. S., Philadelphia, Pa.—Driving bits. D 2-3. 284
- 131a Whelen, Richard P., New York, N. Y.—Bridle bits. D 2-3. 284

## Fabrics of Vegetable, Animal, or Mineral Materials.

- 132 Davidson Rubber Co., 30 Franklin street, Boston, Mass.—Rubber goods, used in druggist, surgical, stationery, and fine rubber work. We use nothing but the finest stock, and make superiority in finish and quality our aim. C 2-8. 285
- 133 Gossamer Rubber Co., Boston, Mass.—Gossamer water-proof cloaks, coats, and overcoats, hats, caps, and umbrellas. C 2-11. 285
- 134 Taylor, W. B. S., 365 Broadway, New York, N. Y.—Gas tight flexible tubing, for portable light and gas stoves, and gas-proof cloth for gasometers. C 2-9 and 10. 285
- 135 Goodyear Rubber Co., New York, N. Y.—Rubber goods, enameled and table oil cloths. C 2-9 and 10. 285
- 136 National Rubber Co., Providence, R. I.—Rubber boots, shoes, clothing, cloths, stationers' and druggists' articles, mats, belting, hose, cushions, beds, pillows, etc. C 2-9 and 10. 285
- 137 New Brunswick Rubber Co., New Brunswick, N. J.—Rubber boots and shoes. C 2-11. 285
- 138 Vulcanized Fibre Co., Wilmington, Del.—Hard and flexible goods of vulcanized fibre. G 1. 285
- 139 Chadeayne & Christian, Yonkers, N. Y.—Rubber boots. G 1. 285
- 139a Star Rubber Co., Trenton, N. J.—India-rubber goods for mechanical purposes. G 1. 285

## Carriages, Vehicles, and Accessories.

- 140 Peters Calhoun Co., Newark, N. J.—Harness, saddles, and bridles. E 1-12. 296

## Harness, Leather-Working Machinery.

- 142 Kessler & Bro., Philadelphia, Pa.—  
Wooden and plated hames. E 1-5. 296
- 142a Karr, Wm., Karsville, N. J.—  
Draft harness. E 1-1. 296
- 142b Crittenden, L. S., Cuba, N. Y.—  
Combination horse blanket and fly pro-  
tector. E 1-12. 296
- 142c Hallett, Hervey H., Rockland,  
Mass.—Harness saddle. E 1-13. 296
- 142d Ries, Anton, Philadelphia, Pa.—  
Harness. E 1-4. 296
- 142e Taylor, Marshall B., Ludlow, Vt.  
—Whip lashes. E 1-5. 296
- 142f Hamly, Wm., Ripon, Wis.—  
Wire stitched horse collars. E 1-4. 296
- 142g Rosenthal, Henry, New York, N.  
Y.—Leather back horse brushes. F 1-1.  
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- 142h Heydecke, Wm., Newark, N. J.—  
Wood hames. E 1-13. 296
- 143 Haedrick, Henry G., & Sons, Phila-  
delphia, Pa.—Harness and saddlery;  
preparation for polishing and dressing  
harness. E 1-10. 296
- 143a Burns & Degnan, St. Louis, Mo.—  
Vented side saddle. E 1-11. 296
- 144 Moyer, E. P., & Bros., Philadel-  
phia, Pa.—Harness, saddlery, and  
trunks. E 1-3. 296
- 145 Hansell, W. S., & Sons, Philadel-  
phia, Pa.—Harness and saddlery, and  
horse clothing. E 1-4. 296
- 146 Lynch, Anthony, Philadelphia, Pa.—  
Gold-mounted double and single har-  
ness. E 1-10. 296
- 147 Sallada & Pearson, Philadelphia,  
Pa.—Ladies' and gentlemen's riding and  
driving whips. E 1-13. 296
- 148 McFadden, Patrick, Philadelphia,  
Pa.—Single harness and saddlery. F 1-1.  
296
- 149 Yeager, Daniel A., Media, Pa.—  
Double and single harness, riding sad-  
dles and bridles. E 1-2. 296
- 150 Wilson, R. F., Milton, Pa.—Fly  
nets. E 1-4. 296
- 150a Wrigglesworth, W. J., Darlington,  
Wis.—Horse collar, collar, cap, and  
pad. E 1. 296
- 150b Phillips, Samuel R., Philadelphia,  
Pa.—Harness, saddles, whips, etc. E 1-2.  
296
- 150c Golcher Bros., Philadelphia, Pa.—  
Bridle winkers. F 1-1. 296
- 151 Weaver & Bardall, Western Peni-  
tentiary, Pittsburg, Pa.—Leather  
whips. E 1-13. 296
- 152 Moseman, C. M., & Bro., New York,  
N. Y.—Single and double harness and  
saddlery. E 1-1 and 9. 296
- 153 Korne & Currie, New York, N. Y.—  
Single and double harness. E 1-5. 296
- 154 Moore, Thomas, New York, N. Y.—  
Plain and fancy horse collars. E 1-2. 296
- 155 Manheim, William, New York,  
N. Y.—Harness loops and back curtain  
loops. F 1-2. 296
- 156 American Whip Co., Westfield,  
Mass.—Driving and riding and leather  
whips and lashes. F 1-1. 296
- 157 Wilder, J. Lyman, Hartford, Conn.—  
Patent leather harness work, rosettes,  
etc. E 1-5. 296
- 158 Hill, James R., & Co., Concord,  
N. H.—Single and double harness and  
collars. "The Concord harness" is  
made in all styles and of every descrip-  
tion, from the lightest, finest, and most  
elegant in use, to the heaviest and strong-  
est required for any kind of work. Are  
remarkable for style, workmanship,  
strength, and durability. Correspondence  
solicited. Circulars furnished on applica-  
tion. E 1-1 and 9. 296
- 159 Gale, A. D., Pittsfield, Mass.—  
Double coach harness and paper trunk.  
E 1-6. 296
- 160 Motts, George, Washington, D. C.—  
Gold mounted buggy harness. E 1-4. 296
- 161 Lighthouse, J. C., Rochester, N. Y.—  
Horse collars and pads. E 1-5. 296
- 162 Stewart, John P., Rochester, N. Y.—  
Carriage and draft horse collars. E  
1-13. 296
- 162a Spencer, Robert, Brooklyn, N. Y.—  
Saddle cloths. E 1-13. 296

## Leather Machinery.

- 163 Pusey, Jones, & Co., Wilmington,  
Del.—Tanning apparatus and glazing  
machine for morocco factory. E 2-3 and  
12. 53
- 163a Mitchell, J. E., Philadelphia, Pa.—  
Carriers' blocks, clearing and scoring  
stones. A 2-2. 53
- 163b Smith, Wm. M., Philadelphia, Pa.—  
Device for regulating sewing machine.  
E 2-2. 53
- 163c Stoddard & Fifield, North Brook-  
field, Mass.—Skiving machines. F 2-1.  
53
- 163d Carl, Frederick, Somerville,  
Mass.—Model of stuffing mill for leather.  
E 2-9. 53
- 163e Lewis, Rufus E., New Hampton,  
N. H.—Machine for currying leather. F  
2-3. 53
- 163f Bowser, J. C., Fort Wayne, Ind.—  
Stationary engine, boiler, and fixtures.  
E 2-1. 53
- 163g Newton, E. P., Gloversville, N. Y.—  
Glove, mitten, and leather cutting ma-  
chines. F 2-4. 53
- 164 Walters, G. C., Philadelphia, Pa.—  
Wet-skin sewing machine. E 2-8 and  
9. 53
- 166 Horn, W. H., & Bro., Philadelphia,  
Pa.—Tanners', curriers', and shoe-  
makers' tools and machinery. D 2-3. 53
- 167 Osborne, C. S., & Co., 96 Me-  
chanic street, Newark, N. J.—Saddlers'  
and harness makers' tools. Manufact-  
urers of saddlers' and harness makers'  
tools of superior quality and finish. Es-  
tablished 1826. Send for catalogue. E  
2-4 and 11. 53

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 209.

## Leather-Working Machinery and Tools.

- 168 Knox, David, Lynn, Mass.—Pebbling and polishing machine; sole-cutting machine. F 2-4. 532
- 168<sup>a</sup> McLaughlin, Grover, & Lloyd, New York, N. Y.—Machine knives, leather, cloth, and paper dies or cutters. D 2-5. 532
- 168<sup>b</sup> Sturtevant, Benjamin F., Boston, Mass.—Hot blast apparatus for tanneries and curriers' shops. F 2-1 and 2. 532
- 169 Coogan, Owen, Pittsfield, Mass.—Boarding and graining machine. E 2-9. 532
- 170 Reed, Harvey, Vineland, N. J.—Combination tannery. F 2-5. 532
- 171 Lockwood, Frederick A., Fall River, Mass.—Automatic leather-scouring machine. E 2-12. 532
- 172 Baker, George W., Wilmington, Del.—Skin-sewing machine. E 2-9 and 2. 532
- 173 Fisk, Joseph E., Salem, Mass.—Leather-whitening and buffing machine. E 2-10. 532
- 174 Lampert, Henry, Rochester, N. Y.—Round beam hide worker. E 2-9. 532
- 175 Rosensteel, W. H., Johnstown, Pa.—Model of leather-dressing machine. F 2-5. 532
- 176 Thompson & Nowell, Boston, Mass.—New patent bark-cutting and roasting machine. Tanners are respectfully invited to examine the machine and obtain circulars of information. E 2-3. 532
- 177 Swain, Fuller, & Co., Lynn, Mass.—Beating-out, moulding, and buffing machines. E 1-6 and 14. 532
- 178 Plummer, W. E., Boston, Mass.—Leather, buffing, whitening, and skiving machine; rotary tan press; round leach for leaching bark. E 2-5 and 11. 532
- 179 Gibson, F. N., New Ipswich, N. H.—Raising, creasing, and waving machine for harness makers, etc. F 2-6. 532
- 179<sup>a</sup> Harkinson, Robert, Philadelphia, Pa.—Hooks for tanners' use. A 2-3. 532
- Shoe Machinery.**
- 180 Tapley Heel Burnishing Machine Association, Boston, Mass.—Heel-burnishing machine. E 1-7 and 15. 533
- 180<sup>a</sup> Stowe, A. F., Worcester, Mass.—Splitting, rolling, boot shaping, and side welt machines. F 2-1. 533
- 180<sup>b</sup> Morse, Eddy, & Co., Boston, Mass.—Wax thread, tripp sewing, burnishing, leveling, and sole cutting machines. F 2-1. 533
- 180<sup>c</sup> Union Edge Setter Co., Lynn, Mass.—Edge burnisher for boots. E 1-15. 533
- 180<sup>d</sup> Hall, M. H., Philadelphia, Pa.—Cutting machine for boots and shoes. F 2-4. 533
- 180<sup>e</sup> Domestic Sewing Machine Co., New York, N. Y.—Boot and shoe sewing machines. E 2-9. 533
- 181 Tubular Rivet Co., Boston, Mass.—Rivets for boots, shoes, harness, belting, etc. F 2-6. 533
- 182 American Shoe Tip Co., Boston, Mass.—Boots and shoes with wire-quilted soles and toe protection. F 2-7. 533
- 183 Roney, James B., Philadelphia, Pa.—Shoe trimming and edge setting machines. E 1-10 and 14. 533
- 184 Howe Machine Co., Bridgeport, Conn.—Boot and shoe sewing machines. F 2-3. 533
- 185 Buzzell, J. G., & Co., Lynn, Mass.—Buffing and heel securing machines. F 2-3 and 6. 533
- 186 Carver Cotton Gin Co., East Bridgewater, Mass.—Leveling, counter skiver, and welt cutter, and shank machines. F 2-5. 533
- 187 McKay Sewing Machine Association, Boston, Mass.—Shoe sewing and riveting machines and out-sole tacker. The McKay Sewing Machine is in use for sewing soles to boots and shoes; will sew nine hundred pairs per day; thirty-five million pairs are annually sewed on it in the United States. The riveting machines are for riveting soles to boots and shoes. The rivets are corrugated, automatically cut to the proper length, and firmly clinched on the insole. Three hundred pairs per day can be riveted, either in a channel or on the surface. The outsole tackers are for laying out soles. The nails clinch, are thoroughly buried in the insole, and always hold the sole. E 1-15. 533
- 188 May, Withey, & Drake, Lynn, Mass.—Shoe drying machine. F 2-6. 533
- 189 Stimpson, Edwin B., New York, N. Y.—Shoe machinery. E 1-6 and 14. 533
- 190 Hanan & Dewees, New York, N. Y.—Cutting dies and punches, shoe patterns, and lasts. D 2-7. 533
- 191 Hautin Sewing Machine Co., New York, N. Y.—Shoe sewing machine. E 2-11. 533
- 191<sup>a</sup> Saurbier, H., & Sons, Newark, N. J.—Saddlers', tanners', and shoemakers' tools. F 1-2. 533
- 191<sup>b</sup> Barnett, G. & H., Philadelphia, Pa.—Shoe rasps and files. D 2-2. 533
- 191<sup>c</sup> American Cable Screw Wire Co., Boston, Mass.—Screw, cable screw wire, and tacking machines. E 2-10. 533
- 191<sup>d</sup> Sturtevant, B. F., Boston, Mass.—Steam blowers and peg machine. F 2-1-2. 533
- 191<sup>e</sup> Whittemore, D., Boston, Mass.—Shoe and harness machines. F 1-5, 6, and 7. 533
- 191<sup>f</sup> Heaton, David, Providence, R. I.—Button fastener. E 2-3. 533
- 192 S. W. Jamison Boot & Shoe Crimping Machine Co., New York, N. Y.—Steam boot and shoe crimping machine. E 2-6 and 13. 533
- 192<sup>a</sup> Wheeler & Wilson Manufacturing Co., Bridgeport, Conn.—Shoe sewing machines. E 2-4 and 11. 533
- 192<sup>b</sup> Smith, W. M., Philadelphia, Pa.—Device for driving sewing machines. E 2-2. 533
- 192<sup>c</sup> Stephens, W. A., Philadelphia, Pa.—Sole screwing machine. E 2-13. 533

## Leather-Working Machinery and Tools, Leather.

- 192<sup>d</sup> Kafer & De Lacy, Trenton, N. J.—Steam burnishing iron heater. E 2-7. 533
- 193 Goodyear & McKay Sewing Machine Association, Boston, Mass.—Shoe sewing machines. E 1-8 and 16. 533
- 194 Graves, L. S., Rochester, N. Y.—Machines for stripping, splitting, rolling and moulding, and heel pressing. E 2-7 and 14. 533
- 196 Cutlan Shoe Sewing Machine Co., Philadelphia, Pa.—Turned shoe sewing machine, channeller and edge turner. F 1-8. 533
- 197 Redifer, S. S., Philadelphia, Pa.—Shoe lasts, patterns for dies. D 2-5. 533
- 198 Miller, Thomas L., Philadelphia, Pa.—Beveling, channeling, moulding, and sewing machines for shoes. F 1-8. 533
- 200 Cushman, C. S., Philadelphia, Pa.—Leather and shoe stitching attachment. E 1-12. 533
- 201 Evans, Thomas R., Philadelphia, Pa.—Boot and shoe tree, lengthener, stretcher, and lasts. D 2-5. 533
- 202 Smith, J. Barton, & Co., Philadelphia, Pa.—Rasps and files for shoemakers and manufacturers. E 2-13. 533
- 203 Graf, Leopold, Newark, N. J.—Shoe burnishing and polishing machine. F 2-4. 533
- 203<sup>a</sup> Tuck, S. V., Brockton, Mass.—Shoe knives and tools. D 2-6. 533
- 203<sup>b</sup> Tingley, John, Philadelphia, Pa.—Rotating detachable shoe heel, and machine for attaching. D 1-5. 533

## Animal and Vegetable Products.

- 204 Wedekind, Hallenburg, & Bro., Louisville, Ky.—Oak sole leather. B 2-3 and 10. 652
- 205 Trautwein, C., & Co., Louisville, Ky.—Chestnut oak sole leather. B 2-3 and 10. 652
- 206 Stoll, J. B., & Co., Louisville, Ky.—Oak skirting leather. B 2-3 to 10. 652
- 207 Ohio Falls Oak Leather Co., Louisville, Ky.—Oak harness, bridle, and belting leather. B 2-3 and 10. 652
- 208 Conrad, Fabel, & Mooney, Louisville, Ky.—Oak sole leather. B 2-3 to 10. 652
- 209 Schellberg, B. F., Germania P. O., Ala.—Rough leather. A 2-7. 652
- 210 Burt, F. H., & Son, Mannington, W. Va.—Oak sole leather. A 1-6. 652
- 211 Wisconsin Leather Co., Milwaukee, Wis.—Sole, upper, and harness leather. A 1-5, B 2-5. 652
- 212 Hidden, E. S., Milburn, N. J.—Leather boards for shanking insoles and counters by improved process; also, patent excelsior carriage washers from compressed leather fibre. A 2-1. 652
- 213 Hurkamp, J. G., Fredericksburg, Va.—Virginia sumac. A 2-3. 652
- 213<sup>a</sup> Baer, A. P., & Co., Baltimore, Md.—Chestnut oak extract; quercitron and chestnut oak bark. A 1-5. 652
- 514 Leas & McVitty, Philadelphia, Pa.—Oak sole leather. A 2-6. 652
- 215 Keen & Coates, Philadelphia, Pa.—Oak-tanned sole leather for finest boot and shoe work. A 2-7. 652
- 216 Williams', Chas. B., Sons, Philadelphia, Pa.—Oak-tanned slaughter sole leather. A 2-6. 652
- 217 Horton, Crary, & Co., Sheffield, Pa.—Hemlock sole leather. A 1-5. 652
- 218 Shriver, A. K., & Sons, Union Mills, Md.—Oak sole leather. A 1-5. 652
- 219 Sommerville, Jas. N., Bellefonte, Pa.—Oak sole and belt leather. A 1-6. 652
- 220 Downing & Price, Wilmington, Del.—Oak sole and belt leather. A 1-6. 652
- 221 DeLong Bros., Philadelphia, Pa.—Oak rough slaughter leather. A 2-7. 652
- 222 Spanogle & Pennabaker, Philadelphia, Pa.—Oak sole leather. A 2-6. 652
- 223 Hibernia Tannery, Blaine, Pa.—Buenos Ayres sole leather. A 2-5 and 6. 652
- 224 Hensch, Geo., Centre, Pa.—Oak sole leather. A 2-5 and 6. 652
- 225 Hensch, A. L., Alum Banks, Pa.—Hemlock sole leather. A 2-5 and 6. 652
- 226 McNeal & Black, Man's Choice, Pa.—Slaughter sole. A 2-5 and 6. 652
- 227 Mapleton Tannery, Mapleton, Pa.—Texas sole. A 2-5 and 6. 652
- 228 Rife, Henry J., Philadelphia, Pa.—Sole and harness leather, and finished calskins. A 2-5. 652
- 229 Forepaugh, W. F., & Bro., Philadelphia, Pa.—Oak-tanned whole hides. A 1-4. 652
- 230 Leas, Wm. B. Shirley, Tanners, Philadelphia, Pa.—Oak sole leather. A 1-4. 652
- 231 Hoffman, Jacob, Philadelphia, Pa.—Oak sole leather. A 2-5. 652
- 232 Rosensteel, W. H., Johnstown, Pa.—Union crop leather. A 1-7. 652
- 233 Hardenburgh, Hartwell, & Co., English Centre, Pa.—Sole leather. A 1-5. 652
- 234 Howard, J. W. & A. P., & Co., Corry, Pa.—Hemlock sole leather. A 1-5. 652
- 235 Greenawalt, J. & J. K., Harrisburg, Pa.—Oak sole, harness, wax upper, and calf leather. A 2-6. 652
- 236 Wilkinson, J. P., & Bro., Unionville, Pa.—Oak sole and harness leather. A 2-7. 652
- 237 Underhill & Noble, Athens, Pa.—Hemlock sole leather. A 1-7. 652
- 238 Ray, Daniel P., Tyrone, Pa.—Union crop sole leather. A 2-7. 652
- 239 Webb, Wm. B., Frankford, Pa.—Leather aprons for worsted machinery picker, band, and lace leather. A 2-7. 652

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 106.



## Leather.

- 240** Bechtel, John A., & Son, Newport, Pa.—Oak sole leather. A 2-6. 652
- 241** Messer & Keck, Allentown, Pa.—Union crop backs. A 2-7. 652
- 242** Genesman, Miller, & Co., Pinegrove, Pa.—Oak slaughter sole leather. A 2-7. 652
- 243** Rippman, C. A., Newport, Pa.—Slaughter sole and rough skirting leather. A 2-7. 652
- 244** Kerper, Henry, Reading, Pa.—Oak rough leather. A 2-7. 652
- 244a** Spaulding, Edward, Boston, Mass.—Hemlock sole leather. A 1-5. 652
- 244b** Chatfield, Underwood, & Co., New York, N. Y.—Oak sole and rough leather. A 2-4. 652
- 244c** Thorne, McFarland, & Co., New York, N. Y.—Hemlock sole leather, from Thorndale, Laporte, and Torvanda tanneries. A 1-7. 652
- 244d** Faust, Alvin, D., & Son, Upper Dublin, Pa.—Oak sole and rough leather. A 2-7. 652
- 244e** Corbin, A., & Co., New Milford, Pa.—Hemlock sole leather. A 1-7. 652
- 245** Bare, John, Mt. Union, Pa.—Union crop sole leather. A 2-7. 652
- 246** Baer, Arthur P., & Co., hide & leather dealers, Nos. 7 & 9 Cheapside, Baltimore, Md., proprietors of Schlosser Tannery.—Slaughter oak sole leather. Vienna medal. A 1-4. 652
- 247** Deford & Co., First National & Battle Run Tanneries, Baltimore, Md.—Slaughter sole leather. A 2-4. 652
- 248** Appold, Geo., & Sons, Baltimore, Md.—Slaughter oak sole leather. A 2-4. 652
- 249** Jenkins, Staylor, & Co., Baltimore, Md.—Oak sole leather, from the Baltimore Star, Mt. Vernon, Swift-Run, and Prospect tanneries. A 2. 652
- 249a** Halsey, Saml., & Son, Newark, N. J.—Patent and enameled leather. B 1-5. 652
- 249b** Buck, C., Fleming, Pa.—Oak sole leather. A 2-7. 652
- 249c** Maynard, Ely & Roso, Baltimore, Md.—Calf and kip skins. D 2. 652
- 249d** Lapham, Smibert, & Co., Chicago, Ill.—Sole leather. A 1-6. 652
- 249e** Robertson & Hoople, New York, N. Y.—Hemlock sole leather. A 1-7. 652
- 249f** Frantz, D., & Son, Louisville, Ky.—Oak sole leather. A 2-3. 652
- 250** Decker, David, Wellsburg, N. Y.—Union back sole leather. A 2-4. 652
- 251** Palmer & Decker, Elmira, N. Y.—Union back sole leather. A 2-4. 652
- 252** Kinley, Adam, Breesport, N. Y.—Union crop sole leather. A 2-5. 652
- 252a** Shultz, Southinck, & Co., New York, N. Y.—Hemlock and Union crop sole leather. A 1-8. 652
- 253** Osterhout, W. H., Ridgway, Pa.—Hemlock sole leather. A 1-8. 652
- 254** Wilcox Tanning Co., Wilcox, Pa.—Hemlock sole leather. A 1-8. 652
- 255** Innes, Adam, Granville Centre, Pa.—Union slaughter backs sole leather. A 1-8. 652
- 256** Innes, Adam, Grovers, Pa.—Crop sole leather. A 1-8. 652
- 257** Childs & Bloomer, Nicholson, Pa.—Slaughter crop sole leather. A 1-8. 652
- 258** McKinstry & Childs, Schuylville, Pa.—Slaughter crop leather. A 1-8. 652
- 259** Hoyt, J. B., & Co., New York, N. Y.—Oak-tanned leather belting. A 1-4. 652
- 260** Hoyt Bros., New York, N. Y.—Hemlock sole leather. A 2-3. 652
- 261** Brown, E. T., & Co., 82 Gold street, New York, N. Y.; Luzerne Tannery, James Davis & Co., Pittston, Pa.—Union crop sole leather; very solid, fair color. A 2-4. 652
- 262** Lee, W. Creighton, Balladaybush & Tioga Tanneries, New York, N. Y.—Hemlock sole leather. A 1-7. 652
- 263** Hubbard & North, Oswego, New York, N. Y.—Hemlock sole leather. A 1-6. 652
- 264** Wells, Henry F., Germania Tannery, Ludletown, N. Y.—California hemlock sole leather. A 1-6. 652
- 265** Kenyon, J. A., & Co., Trout Creek Tannery, Cannonville, N. Y.—Texas hemlock sole leather. A 1-6. 652
- 266** Bulkley, J. E., & Sons, New York, N. Y.—Hemlock sole leather. A 1-8. 652
- 267** Horton, G. B., & Co., New York, N. Y.—Hemlock sole leather. A 1-7. 652
- 268** Lapham, H. G., Tunkhannock Tannery, Tunkhannock, Pa.—Union back sole leather. A 2-4. 652
- 269** Rockwell Bros., Clarendon Tannery, Warren, Pa.—Hemlock sole leather. A 1-7. 652
- 270** Costello, P. & P., Camden Tannery, Camden, N. Y.—Hemlock sole leather. A 1-7. 652
- 271** Beach & Dodge, Harrisville, Lewis Co., N. Y.—Hemlock sole leather. A 2-7. 652
- 271a** Prichett & Baugh, Philadelphia, Pa.—Oak sole leather from Strasburg, Path, and Franklin tanneries. A 2-3. 652
- 271b** Kirkpatrick, Kinzey & Co., Philadelphia, Pa.—Union sole leather. A 2-4. 652
- 271c** Howell, Joseph & Co., Philadelphia, Pa.—Oak sole leather. A 2-3. 652
- 271d** Hersey, Washburn, & Co., Boston, Mass.—Hemlock sole leather. A 1-3. 652
- 271e** Steinwand, Chas., Philadelphia, Pa.—Calf and kip skins. B 2-13. 652
- 272** Adams & Shaler, New York, N. Y.—Sole leather. A 1-8. 652
- 273** Thomas Extract Co., Elmira, N. Y.—Sole leather and belting leather, tanned with Thomas's clarified extract of hemlock bark exclusively, and with other tanning materials, in various percentages. A 2-5. 652

## Leather.

- 274 Perry, F. H., & Co., Limestone, N. Y.—Hemlock sole leather. A 1-7. 652
- 275 Lampert, Henry, Rochester, N. Y.—Sole and upper leather. E 2-9. 652
- 276 Devereaux, A., & Son, Deposit, N. Y.—Hemlock sole leather. A 1-5. 652
- 277 Spaulding, Edward, Boston, Mass.—Hemlock sole leather. A 1-5. 652
- 279 Proctor, Thos. E., Boston, Mass.—Hemlock sole leather, curried leather, and splits. A 1-5. 652
- 280 Fairbrother, H. L., & Co., Pawtucket, R. I.—Belted lace and hame string leather. A 1-4. 652
- 281 Jewett & Keating, Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 282 Williams, C. H., & G. L., Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 283 Rumsey, A., & Co., Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 284 Gardner, N. H., & Co., Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 285 Schoellkopf, J. F., & Son, Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 286 Rose, Adolf, Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 287 Bush & Howard, Buffalo, N. Y.—Hemlock sole leather. A 1-6. 652
- 288 Nepper, E. & D., Cincinnati, O.—Oak sole leather. A 2-5. 652
- 289 Elsas & Pritz, Cincinnati, O.—Oak sole leather. A 2-5. 652
- 290 Ballauf, Louis, Cincinnati, O.—Oak sole leather. A 2-5. 652
- 291 Steigler, A., & Co., Cincinnati, O.—Oak sole, harness, and skirting leather. B 2-11. 652
- 292 Kessler, Henry, Cincinnati, O.—Oak sole and harness leather. A 2-5. 652
- 293 Lang & Wanner, Cincinnati, O.—Oak sole and harness leather. A 2-5. 652
- 294 Bardes, Louis C., Cincinnati, O.—Harness leather. B 2-4. 652
- 295 Lawrence, John H., Cincinnati, O.—Skirting, calf, seating, and bridle leather. B 2-11. 652
- 296 Martin & Riedle, Cincinnati, O.—Russet leather. B 2-11. 652
- 297 Freiberg, Henry, Cincinnati, O.—Harness leather. B 2-11. 652
- 298 Lappe & Hax, Pittsburg, Pa.—Oak butts and rough skirting leather. A 2-4. 652
- Harness, Kip, and Calf.**
- 299 Groetzinger, A. & J., Alleghany City, Pa.—Oak sole leather. A 2-4. 652
- 300 Alexander, E. H., Alleghany City, Pa.—Imitation French calf and kip skins. B 2-13. 652
- 300a Wunderlich, Reinhard, New Albany, Ind.—Harness leather. B 2-3-10. 652
- 300b Day, Theodore, New Albany, Ind.—Wax leather. B 2-8-10. 652
- 300c Schuman, John W., Louisville, Ky.—Oak harness leather. B 2-3-10. 652
- 300d Roekenback, H., New Albany, Ind.—Harness leather. 2-3-10. 652
- 301 Woelfel, Fred'k, Alleghany City, Pa.—Harness leather. B 2-12. 652
- 301a Halsey, Samuel, & Son, Newark, N. J.—Patent and enamelled leather. B 1-5. 652
- 301b Hahn, H., & Stumpf, East Newark, N. J.—Wax calfskins. B 2-11. 652
- 301c Wetzlar, Albert, New York, N. Y.—Calf, kip, wax upper and split leather. B 2-5. 652
- 301d Steinmand, Charles, Philadelphia, Pa.—Calf and kip skins. B 2-13. 652
- 301e Straus, M., Newark, N. J.—Leather. B 2-9. 652
- 301f Baltimore Calfskin Association, Baltimore, Md.—Calfskins rough, finished, and in the hair. B 2-6. 652
- 301g Loeb & Bros., Philadelphia, Pa.—Waxed calfskins. B 2-11. 652
- 301h Maynard, Ely, & Rose, Baltimore, Md.—Finished calf and kip skins. B 2-11. 652
- 302 Kiefer, Stiefel, & Co., Alleghany City, Pa.—Harness leather. B 2-12. 652
- 303 Holstein, A., Alleghany City, Pa.—Harness leather. B 2-5. 652
- 304 Lappe & Hax, Alleghany City, Pa.—Harness leather. B 2-5. 652
- 305 Lappe, J. C., Alleghany City, Pa.—Harness leather. B 2-5. 652
- 306 Gallery, Jas., & Co., Pittsburg, Pa.—Harness and saddlers' leather. B 2-5. 652
- 307 Braun, Frederick, Philadelphia, Pa.—Calf and kip skins. B 2-13. 652
- 308 Ludy, C., & Sons, Philadelphia, Pa.—Finished oak calfskins. B 2-11. 652
- 309 Wensley, Jas., Philadelphia, Pa.—Shoe uppers. B 2-13. 652
- 310 Schuman, F., & Son, Philadelphia, Pa.—Calf and kid leather. B 1-6. 652
- 311 Chambers, Edwin, West Chester, Pa.—Finished calfskins. B 2-6. 652
- 312 Mardorf, C., Freeport, Pa.—Harness, calf, veal kip, and upper leather. B 2-13. 652
- 313 Hollinger, Amos, Lancaster, Pa.—Oak harness leather. B 1-4. 652
- 314 New York Manufacturing Leather Co., New York, N. Y.—Leather cloth for upholstering and carriages. B 2-5. 652
- 315 Moffat, David, & Co., New York, N. Y.—Oak-tanned harness leather. B 2-7. 652
- 316 Michel, A. M., New York, N. Y.—Buff, grain, and calf skins; harness leather; boots and shoes. B 2-5. 652
- 317 Brown, Elijah T., & Co., 82 Gold street, New York, N. Y.—Cromwell's finished calfskins, sold in this market twenty years; have a high reputation in foreign markets. B 2-12. 652
- 318 Shattuck & Binger, New York, N. Y.—Tanned alligator skins, black and colored. B 2-12. 652

For location of objects, indicated by letter and figure, see Notation, p. 205; ground plan, p. 203.

## Leather.

- 319 Studwell, Sanger, & Co., New York, N. Y.**—Imitation goat, splits and buff; finished calf, russet and union backs. B 2-12 and A 2-6. 652
- 320 Haubner & Heller, New York, N. Y.**—Finished calf and kip skins. A 2-3. 652
- 321 Thomas Extract Co., Elmira, N. Y.**—All kinds of light leather tanned with Thomas's clarified extract of hemlock bark exclusively, and with other tanning materials in various percentages. Thomas's bark granulating mill. B 2-12. 652
- 322 Weed, J. B. & F. M., & Co., Binghamton, N. Y.**—Imitation goat, split, kip, and harness leather. B 2-12. 652
- 323 Miller, J. & J., & Co., Boston, Mass.**—Hemlock extract and leather tanned by same. B 2-2. 652
- 324 Osborne, F., Jr., & Co., Boston, Mass.**—New Orleans kip leather, plain and buffed. B 2-2. 652
- 325 Butler, Dunn, & Co., Boston, Mass.**—Buff leather made from slaughter hides. B 2-1. 652
- 326 Thompson, B. F., & Co., Boston, Mass.**—Buff and split leather; also, imitations of goat, kid, and morocco insides, of grain leather. B 1-1. 652
- 326a Scofield & Stevenson, New York, N. Y.**—Caliskins, harness, wax upper, grain and welt leather. B 2-5. 652
- 326b Beiser, A. & J., New York, N. Y.**—Cordovan leather. A 2-2. 652
- 326c Karrer, Joseph & Aaron, Detroit, Mich.**—Calf and kip leather. B 2-12. 652
- 326d Herring, W. P., & Co., Gouverneur, N. Y.**—Rough hemlock caliskins. B 2-7. 652
- 326e Schaff, Wm., & Co., Louisville, Ky.**—Harness leather. B 2-3-10. 652
- 326f England & Bryan, Philadelphia, Pa.**—Finished shoes kirting, waxed upper and split leather. A 2-1. 652
- 327 Cummings, John, & Co., Boston, Mass.**—Imitation goat, polish grain, calf, split, and buff leather. B 2-2. 652
- 327a Stengel, George, Newark, N. J.**—Patent leather. B 1. 652
- 327b Spanogle, Samuel, Nassville, Pa.**—Rough kip and calf leather. B 2. 652
- 327c Barth, A., & Co., Louisville, Ky.**—Harness, skirting, and wax leather. B 2, 3-10. 652
- 327d Mooney, W. W. & J. E., Columbus, Ind.**—Sole, harness, skirting, and belt leather. B 2, 3-10. 652
- 328 Guild, Josiah F., Boston, Mass.**—Pebble grain, imitation goat, buff, and split leather. B 2-9. 652
- 329 Proctor, Thomas E., Boston, Mass.**—Curried leather and splits. B 2-8. 652
- 330 Way, John S., & Co., Bridgeport, Conn.**—Leather, buffalo robes. A 2-1. 652
- 331 Zipp, Philip C., Baltimore, Md.**—Calf, kip, and grain leather. B 2-6. 652
- 332 Appold, George, & Sons, Baltimore, Md.**—Chestnut, oak-tanned calf skins. B 2-4. 652
- 333 Sharp, Tudor, & Co., Baltimore, Md.**—Oak buff upper leather, and rough skirting. A 2-2. 652
- 334 Cunningham & Co., Nashville, Tenn.**—Oak harness and rough leather. B 2-1. 652
- 336 Wisconsin Leather Co., Milwaukee, Wis.**—Harness, wax upper, and split leather. B 2-5. 652
- 337 National Leather Co., Detroit, Mich.**—Whip, lace, and upper leather, calfskins and robes. A 2-2. 652
- 338 Weil, J., & Bros., Chicago, Ill.**—Upper, harness, kip, and calf leather. B 2-8. 652
- 339 Walker, Oakley, & Co., Chicago, Ill.**—Wax calf union tannage, imitation goat grains, wax upper, card leather. B 2-8. 652

## Morocco and Sheep.

- 340 Foster, A. J., & Co., Boston, Mass.**—Grain leather, goat and sheep skins. B 2-14. 652
- 341 Ely, Henry G., & Co., New York, N. Y.**—Imitation goat pebbled leather, finished wax-split leather. B 2-14. 652
- 342 Rockwell, J. S., & Co., New York, N. Y.**—Sheep leather. Manufacturers of colored and russet linings; pebbled sheep in all colors; white and colored skivers for shoe manufacturers; hatters' skivers; trunk and bag leather and linings; bookbinders' and pocket-book makers' leather of every kind; suspender and organ leather; sumac and alum roans and skivers. This exhibit is entirely of sheep leather. B 1-16. 652
- 343 Guion, Geo. G., New York, N. Y.**—Morocco leather. B 1-7. 652
- 344 Howell, T. P., & Co., Newark, N. J.**—Harness, patent, Russia, and pocket-book leather, sheepskin mats, and roans. B 1-8. 652
- 345 Meyer, Richard, New Durham, N. J.**—Superior buck skins, for pianoforte, shoe, glove makers, and others. B 1-14. 652
- 346 Pusey, Scott, & Co., Wilmington, Del.**—Kid, straight-grain pebbled, and French morocco. B 2-7. 652
- 347 Jones, W., & Co., Wilmington, Del.**—Morocco leather. B 2-14. 652
- 348 Bush, Wm., & Co., Wilmington, Del.**—Morocco leather. B 1-8. 652
- 349 Larrabee, E., & Sons, Baltimore, Md.**—Colored roans and linings, buff splits and wax uppers. B 1-15. 652
- 350 Wentz & Clark, Philadelphia, Pa.**—Morocco leather. B 1-14. 652
- 351 Bockius, Geo., Philadelphia, Pa.**—Morocco leather. B 1-5, and G 1. 652
- 352 Wood, Geo., Philadelphia, Pa.**—Morocco and sheep leather. B 1-13. 652
- 353 Schollenberger, Wm., & Sons, Philadelphia, Pa.**—Calf, kid, sheep alum, and roan leather; satchels, pocket books, and fancy leather goods. B 1-12. 652
- 354 Amer, Wm., & Co., Philadelphia, Pa.**—Morocco leather. B 1-4. 652
- 355 O'Callaghan, Francis O., Philadelphia, Pa.**—Skivers and sheep skins. B 1-13. 652
- 356 Hummel, G. W., & Co., Philadelphia, Pa.**—Morocco leather. B 1-12. 652

## Leather, Saddlery, Furs.

- 357 McNeely & Co., Philadelphia, Pa.**—Morocco leather, sheepskins, and skivers. B 1-4. 652
- 358 Adams & Keen, Philadelphia, Pa.**—Morocco and kid leather. B 1-14. 652
- 359 Bronx Wool & Leather Co., New York, N. Y.**—Morocco and sheep leather. B 1-15. 652
- 360 Locher & Atkinson, Baltimore, Md.**—Morocco. B 1-6. 652
- 361 Martin, A. B., & Co., Lynn, Mass.**—Kid and goat morocco leather. B 1-6. 652
- 362 Block, A., & Co., Philadelphia, Pa.**—Colored sheepskins. B 1-6. 652
- 363 Seavey, Foster, & Bowman, Philadelphia, Pa.**—Machine silk twist. D 1-6. 652

## GREAT BRITAIN.

*West of Centre Aisle, Sect. C, Col. 3 to 4.*

- 1 Brookes, W., & Sons, Walsall, England.**—Saddlery. 296
- 2 Wilson, Walker, & Co., Leeds, England.**—Colored skivers, calf, roans, moroccos, and kids, in every style of finish and for all purposes. 652
- 3 Edinburgh Western Tanning Co., Edinburgh, Scotland.**—Hog skins for saddlery. 652
- 4 Hooper, Cleve, jr., London, Eng.**—Colored skivers and basils, materials for tanning and making glue. 652
- 5 Hooper, C. W., & Sons, London, Eng.**—Materials for tanning and making glue. 652
- 6 Angus, George, & Co., Liverpool, Eng.**—Oak sole leather. (*In U.S. section.*) A 2-3. 652

## GERMANY.

*West of Centre Aisle, Sect. C, Col. 2 to 3.*

- 1 Wolf, S., Mainz.**—Shoes. 251
- 2 Spicharz, P. J., Offenbach.**—Calf, glove, and French kid. 652
- 3 Simon, C., & Son, Kirn.**—Colored and black moroccos, and calfskins. 652
- 4 Meyer, E., Berlin.**—Colored glove kid. 652
- 5 Bruning, H. W., Neumunster.**—Smooth and grained calf, kid and upper leather. 652
- 6 Schaller, G., Laher Baden.**—Colored and black moroccos. 652
- 7 Kaumanus, F. H., Ehrenbreitstein, B. A.**—Sole leather, rhineish oak slaughter sole. 652

## RUSSIA.

*West of Centre Aisle, Sect. C, Col. 1 to 3.*

- 1 Bauerfeind, Adolphus, Warsaw.**—Russian and calf leather. 652

- 2 Panisheff, John, Mournshkine, Government of Nijnii Novgorod, district of Makarief.**—Sheepskins, dressed and half dressed. 652
- 3 Alafoozoff & Alexandroff, Karan.**—Russian leather. 652
- 4 Mikhailoff, Alexis, Moscow.**—Furs, sable, ermine, Korsard fox, Siberian squirrel. 652
- 5 Grunwald, Morice, Riga.**—Furs, and stuffed fur animals. 652
- 6 Komaroff, Nicetas, Moscow.**—Sheep and lamb skins, dressed. 652
- 7 Solin Bros., Nijnii Novgorod.**—Seal grease. 652
- 8 Ossipoff, Michael, Kieff.**—Tallow. 652
- 9 Zinovieff, Alexander, St. Petersburg.**—Boot legs and vamps. 652
- 10 Tembler, K., & Schwede, L., Warsaw.**—Manufactured leather. 652
- 11 Tehernish, E., Shartaash Village, Government of Perm, district of Ekaterinburg.**—Manufactured leather. 652
- 12 Sorakin, Tihlon, Moscow.**—Calf leather. 652
- 13 Sevebreunickoff, Simon, Mourashkin-agon, Nijnii Novgorod, district of Makarief.**—Horse leather. 652
- 14 Savin, Theodore, Ostashkoff, Government of Tver.**—Russian leather and blacked boot legs. 652
- 15 Rene, John, St. Petersburg.**—Sole leather, boot legs, and vamps. 652
- 16 Pervoff, Stephen, Poshekhonze, Government of Faraslow.**—Calf leather and boot legs. 652
- 17 Ostrom Bros., Uleaborg, Finland.**—Sole leather. 652
- 18 Muller, Edward, St. Petersburg.**—Boot legs and vamps. 652
- 19 Long, Frederick, St. Petersburg.**—Calf leather, boot legs, and vamps. 652
- 20 Koorikoff, P., St. Petersburg.**—Leather. 652
- 21 Hufner, Rudolph, St. Petersburg.**—Boot and Russian leather. 652
- 22 Emelianoff, Alexander, St. Petersburg.**—Boot legs. 652
- 23 Efnoff, ——— St. Petersburg.**—Boot legs and vamps. 652
- 24 Company of the Wladimir Tannery, St. Petersburg.**—Sole leather. 652
- 25 Broosnitzine, Nicolas, & Sons, St. Petersburg.**—Sole and boot leather and boot legs. 652
- 26 Bensenson, John, St. Petersburg.**—Boot legs. 652

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 102.

## DESCRIPTION OF BUILDINGS AND SPECIAL EXHIBITS.

**No. 1. MAIN BUILDING.**

See Part I., page 23.

**No. 2. MACHINERY HALL.**

See Part III., page 9.

**No. 3. STOKES & PARRISH MACHINE SHOP, etc.**

Size, 112 feet by 60 feet.

STOKES & PARRISH, Philadelphia.

Constitutes a part of Annex No. 2 to Machinery Hall, and is intended to execute repairs and machine work for the exhibitors. It is located south of Machinery Hall.

**No. 4. AMERICAN BOILER HOUSE.**

Is situated south of Machinery Hall, near the Hydraulic Annex, and furnishes steam for the American Section.

**No. 5. CORLISS BOILER HOUSE.**

Architects, PETTIT & WILSON, Philadelphia.—Size, 40 feet by 80 feet.

CORLISS STEAM ENGINE COMPANY, Providence, R. I.

Is built of composite stone and wood, and furnishes steam for the Corliss engine in Machinery Hall from twenty vertical tubular boilers, aggregating 1400 horsepower. It is situated south of Machinery Hall.

**No. 6. ENGLISH BOILER HOUSE.**

Size, 24 feet by 71 feet.

A composite wood and stone building, furnishing steam to English and other foreign exhibitors in Machinery Hall, and situated to the south of it.

**No. 7. SHOE AND LEATHER EXHIBITION BUILDING.**

See Part III., page 105.

**No. 8. CENTENNIAL BOARD OF FINANCE OFFICE.**

Architect, H. J. SCHWARZMANN.—Size, 140 feet by 212 feet.

A one-story frame building, situated on the left hand side of the main entrance to the Exhibition grounds, and occupied by the Board of Finance for the transaction of daily business.

**No. 9. U. S. CENTENNIAL COMMISSION OFFICE.**

Architect, H. J. SCHWARZMANN.—Size, 192 feet by 140 feet.

Located on the right hand side of the main entrance to the Exhibition grounds. It is built of wood, one story high, and is used as a business office by the Centennial Commission.

**No. 10. CENTENNIAL NATIONAL BANK.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 72 feet by 40 feet.

E. A. ROLLINS, President.

Situated at the northwest corner of the Main Exhibition Building, and east of the Centennial Commission Office. It is one story high, built of wood, and is the medium for transacting the financial affairs of the Exhibition.

**No. 11. WEIMER'S MACHINE WORKS, LEBANON, PA.**

This outdoor exhibit is located south of Machinery Hall, between the Shoe and Leather Building, and Stokes & Parrish Machine Shop, and consists of bells, car dumps, carts for coal, iron bars, and steel coil tuyere.

**No. 12. BARTHOLDI'S FOUNTAIN.**

See Part II., page 146.

Architect, BARTHOLDI, of Paris.—Size, basin, 26 feet in diameter; height, 30 feet, statue, 11 feet.

Situated in the Esplanade in front of the main entrance to the grounds.

**No. 13. CATHOLIC TOTAL ABSTINENCE FOUNTAIN.**

See Part II., page 146.

Architect, HERMAN KIRN, Philadelphia.

Situated at the junction of Fountain Avenue and the Avenue of the Republic, at the northwestern corner of Machinery Hall. In design it is a circular platform, with four arms projecting at right angles, terminating in four smaller circular platforms. From the centre of the large circle rises a marble rockwork sixteen feet high, with a diameter of eighteen feet at base, on which stands a statue of Moses smiting the rock. The water descends from numerous fissures into a basin forty feet in diameter. On each of the circular platforms is a drinking fountain, twelve feet in height and eight feet eight inches in diameter, surrounded with statues nine feet high, representing Father Mathew, Charles Carroll, Archbishop John Carroll, and Commodore John Barry. It has been erected by contributions made by the numerous societies forming the Catholic Total Abstinence Union of America.

**No. 14. FULLER, WARREN, & CO.'S STOVE BUILDING.**

Size, 60 feet by 45 feet.

FULLER, WARREN, & Co., New York city, Chicago, Ill., Cleveland, O., and Troy, N.Y.

Located at the east end of Machinery Hall, and facing the Fountain of the Catholic Total Abstinence Society. It contains samples of stoves, heaters, and ranges in operation; is built of wood, one story high, surmounted by a cupola.

**No. 15. GILLENDER & SONS' GLASSWARE BUILDING.**

Architect, JAMES H. WINDRIM.—Size, 60 feet by 90 feet.

GILLENDER & SONS, Philadelphia.

A one-story frame house, situated west of Machinery Hall, on the walk to the Fifty-second Street entrance, where glass in process of manufacture is shown.

**No. 16. CAMP OF WEST POINT CADETS.**

Located on the eastern slope of George's Hill, at the western end of Fountain Avenue. The tents accommodate 300 cadets, with officers and band.

**No. 17. IRON PIPE.**

ANDREW O'NEILL, Ansonia, Conn.

This is an outdoor exhibit, situated south of Machinery Hall, and consists of water and gas pipes, showing patent process of jointing.

**No. 18. LIBERTY STOVE WORKS.**

Architect, C. C. PHILLIPS.—Size, 45 feet by 34 feet.

CHARLES NOBLE & Co., Philadelphia.

A one-story frame building, located west of Machinery Hall, and south of the Catholic Total Abstinence Fountain, on Fountain Avenue; containing different varieties of heaters, stoves, and ranges manufactured by Noble & Co.

**No. 19. SAWMILL ANNEX.**

Size, 276 feet by 80 feet, and

**No. 20. BOILER HOUSE.**

Architects, PETTIT & WILSON, Philadelphia.

Size, 48 feet by 30 feet.

**UNITED STATES CENTENNIAL COMMISSIONERS.**

Exhibit direct-acting steam saw machines and gang saws. Are on Fountain Avenue, west of Machinery Hall, and consist of a one-story frame open building, and a boiler house attached.

**No. 21. RAILROAD ENGINE HOUSE.**

This building is used for storing and repairing the engines of the Narrow-Gauge Railroad Company, and is located west of Machinery Hall.

**No. 22. ST. CECILIAN ORGANS.**

T. C. KNAUFF, Philadelphia, Pa.

This exhibit consists of miniature organs, and some clocks made in 1676, 1776, and 1876. The building is frame, one story high, and in design resembles an organ. It is situated south of Mineral Annex, No. 1, near eastern entrance to Main Building.

**No. 23. AUTOMATIC RAILROAD.**

Size, 20 feet by 150 feet.

CHARLES W. HUNT, New York.

Illustrations of the mode of unloading vessels by means of a railroad worked by a self-acting apparatus. Is situated west of Machinery Hall.

**No. 24. MONUMENT—THE AMERICAN SOLDIER.**

NEW ENGLAND CO., Hartford, Conn.

This is a colossal monument situated between the Main Building and Art Gallery, on Avenue of the Republic. It is made of Westerly granite, is 21 feet 6 inches high, weighs 30 tons, and is the largest statue of modern times.

**No. 25. GUNPOWDER PILE DRIVER.**

Size, 35 feet by 12 feet.

GUNPOWDER PILE-DRIVING CO., Philadelphia.

Is built in the open air to exhibit the operation of pile-driving by means of gunpowder. It is situated southwest of Machinery Hall, between it and the barrier.

**No. 26. STARR'S IRON WORKS.**

JESSE W. STARR & SON, Camden, N. J.

The space allotted to Messrs. Starr & Son is occupied with gas works, pipes, special castings, stop-valves, lamp-posts, and fire hydrants. It is located southwest of Machinery Hall, close to the barrier.

**No. 27. WEST END RAILWAY OFFICE.**

This is a two-story frame building, situated west of Machinery Hall and north of Railroad engine house, on line of narrow-gauge road, and designed for the transaction of the Company's business.

**No. 28. PNEUMATIC TUBES.**

A. BRISBANE.

These tubes are placed on a platform, showing the process of transmitting messages and packages by this method. The exhibit is situated west of the gas machine, near fence on Elm Avenue.

### **No. 29. EXHIBIT OF NEW ENGLAND GRANITE CO., HARTFORD, CONN.**

Situated in front of Board of Finance office, and consists of a Corinthian monument, 46 feet high, crowned with the statue of Hope. A canopy, 40 feet high, surmounted by spire and cross, under canopy a figure indicative of Memory. A Gothic monument with four polished columns at corners of die; a model of statue representing soldier of 1776 (life size); an individual memorial crowned with cross; a Gothic column, surmounted by spire and turrets; a Scotch granite polished monument, 16 feet high, with circular dome terminating in a finial; an individual memorial; a small monument, terminating in an urn; and a rustic monument, with ivy-circled column surmounted with cross.

### **No. 30. PATENT RAILROAD CROSSING.**

This exhibit is located on line of narrow-gauge road near Elm Avenue, and west of Machinery Hall. It is designed to keep dirt from accumulating between the rails and planks of crossing.

### **No. 31. NEVADA QUARTZ MILL.**

Size, 60 feet by 43 feet.

STATE OF NEVADA.

Exhibits the process of manipulating ores and precious metals. It is a one-story frame building, situated south of Machinery Hall.

### **No. 32. STORE HOUSE.**

A one-story brick building, 10 feet by 10, used for the storage of oil for the machinery department. It is between the Nevada quartz mill and the barrier.

### **No. 33. FRICTION DRUM.**

I. S. MUNDY, Newark, N. J.

Situated west of gas machine, near Elm Avenue, and consists of an improved portable friction drum.

### **No. 34. U. S. HOISTING MACHINE.**

STOKES & PARRISH.

This exhibit adjoins the machine shop of Stokes & Parrish, south of Machinery Hall, and consists of a derrick with engine and boiler attachment.

### **No. 35. CHILIAN AMALGAMATING MACHINERY.**

COMMISSION FOR CHILI.

Contains working models of amalgamating machinery used in working ores, and has a boiler house with small cylinder boilers. Is situated west of Machinery Hall.

### **No. 36. CAMPBELL PRINTING PRESS BUILDING.**

Architect, ALEXANDER B. BARY.—Size, 88 feet by 144 feet.

CAMPBELL PRINTING PRESS AND MANUFACTURING Co., Brooklyn, N. Y.

The various printing presses manufactured by this company are exhibited in operation; the power is furnished by a thirty (30) horse-power engine and boiler. Specimens of type printing from the date of the invention, and of sunlight printing, are shown, and a complete printing office, of the fashion of 1776, is also in operation.



**No. 37. OLD LOCOMOTIVE AND CARS.**

EXHIBITED BY PENNSYLVANIA RAILROAD CO.

This exhibit is situated on line of Narrow-Gauge Railroad, west of Machinery Hall, and consists of the engine "John Bull," with tender and two passenger cars, standing upon the rails and stone sleepers of the first piece of track laid for the Camden & Amboy Railroad, in 1831; also, the first iron prow used on ships in crossing the Atlantic Ocean.

**No. 38. CAR HOUSE.**

Size, 140 feet by 44 feet.

Situated west of Machinery Hall, on line of Narrow-Gauge Railroad; designed for the exhibition of cars.

**No. 39. POLICE STATION.**

This building is situated southwest of Glass Factory, and is used by the Centennial Guard for quarters, etc.

**No. 40. AVERILL CHEMICAL PAINT CO.**

Size, 36 feet by 42 feet.

Contains exhibits of the Averill Chemical Paint ready for use, and applied. The building is constructed on the Rogers patent, has no frame work, and is put together with bolts and iron tongues. It is west of the Liberty Stove Works, on Fountain Avenue.

**No. 41. OFFICIAL CATALOGUE AND NEWSPAPER ADVERTISING OFFICE.**

Size, 20 feet by 30 feet.

CENTENNIAL CATALOGUE COMPANY—S. M. PETTENGILL & Co., New York, Philadelphia, and Boston.

A one-story building, occupied jointly by the Centennial Catalogue Company, and S. M. Pettengill & Co., Newspaper Advertising Agents. Contains bound volumes and files of the principal newspapers of the country, specimen numbers of old newspapers, photographs of editors and publishers, etc. Situated south of the east end of Machinery Hall.

S. M. Pettengill & Co., established 1849, are agents for all the newspapers of the United States and Canada, which are received and filed at their spacious and conveniently located offices, 37 Park Row, New York; 701 Chestnut Street, Philadelphia; 10 State Street, Boston, and upon the Centennial grounds. They have built up a large business by faithful attention to the interests of their customers, for whom they save time, trouble, and expense. Their long experience and large facilities are put at the service of those who consult them respecting the best methods of advertising.

**No. 42. STOKES & PARRISH BOILER HOUSE.**

Size, 10 feet by 10 feet.

Contains a boiler and engines; situated east of the southern central entrance of the Main Building.

**No. 43. EHRET'S WATER-PROOF ROOFING.**

M. EHRET, JR., Philadelphia, Pa.

A circular pavilion, showing fire and water-proof roofing. It is located to the east of the central southern entrance of the Main Building.

**No. 44. TOMBSTONES.**

This exhibit is situated south of the Main Building, near central entrance, and consists of tombstones, inclosed by ornamental iron fence.

**No. 45. TERRA-COTTA PIPES.**

Exhibited by E. W. Rittenhouse & Bro., Baltimore, Md. Comprises drain pipes of different sizes, elbows, angles, etc. Southwest of Machinery Hall, and adjoining the Gas Machine.

**No. 46. MINERAL ANNEX, 1 and 2.**

An extension of the Main Building, to the east of its south central entrance. It contains the greater part of the American exhibits in Department I. (Mining and Metallurgy), which are catalogued in Part I., pages 47 to 60.

**No. 47. FIRE-PROOF VENTILATED BUILDING.**

Architect and Builder, ROBERT IRWEST.—Size, 13 feet by 13 feet.

This is a one-story building composed of hollow bricks, peculiar in construction. Located south of Main Building and Annex No. 2.

**No. 48. HEWITT & BRENNAN'S SWINGS.**

These swings are known as aerial chairs, and are operated by means of a treadle with foot-pressure, leaving the hand entirely free. They number six, and are situated on Agricultural Avenue, immediately south of the American Restaurant, and south of Main Building, where the exhibit is known as aerial chairs.

**No. 49. ORNAMENTAL STONE WORK.**

An exhibit of brown stone, representing a double entrance to dwelling, elaborately carved, with rough dressed trimmings. Located south of St. Cecilia Organ and Main Building Annex No. 1.

**No. 51. UNITED STATES GOVERNMENT BUILDING.**

See Part III., page 72.

**No. 51½. BARTHOLDI ELECTRIC LIGHT.**

Is situated immediately west of Cook, Son & Jenkins' Pavilion, on border of lake, and consists of arm of statue to be erected in New York harbor.

**No. 52. UNITED STATES ARMY POST HOSPITAL.**

See Part III., page 73.

**No. 52½. HOWE MONUMENT.**

This monument was erected by the Howe Machine Co., to the memory of Elias Howe, Jr., the first inventor of sewing machines in this country. It was designed by Mr. Ellis, and cast by Wood Bros., of Philadelphia, and is situated at the western end of the lake, opposite northern central entrance to Machinery Hall.

**No. 53. UNITED STATES HOSPITAL TENT.**

See Part III., page 73.

**No. 53½. JERUSALEM BAZAAR.**

Situated on south side of Fountain Avenue, and due north of Turkish Bazaar. Designed for sale of olive wood.

**No. 54. UNITED STATES LABORATORY.**

See Part III., page 73.

**No. 54½. PHILADELPHIA "TIMES" PAVILION.**

Architects, WILSON BROS. & Co., Philadelphia.—Size, 28 feet by 17 feet.

A. K. McCLURE, Editor.

The Centennial business office of the "Times," a daily paper, issued morning and evening, and printed on a Hoe perfecting press in Machinery Hall. It is a one-story frame building, located on Belmont Avenue, opposite and east of the lake.

**No. 55. PENNSYLVANIA STATE BUILDING.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 97 feet by 55 feet.

A two-story frame building, with a tower, of Gothic style. It faces the lake, between Fountain Avenue and the Avenue of the Republic; contains reception-rooms and offices for the use of the State Commissioners and visitors.

**No. 55½. HUNGARIAN WINE PAVILION.**

Architect, H. J. SCHWARZMANN.

JACOB KOHN, Manager.

This structure is circular in form, situated on State Avenue, north of the Japanese and Mississippi buildings, and devoted to the sale of Hungarian wines exclusively.

**No. 56. OHIO STATE BUILDING.**

Architects, HEARD & SONS, Cleveland, O.—Size, 45 feet by 44 feet, and Annex, 60 feet by 40 feet.

A two-story stone pavilion, located at the junction of State and Belmont Avenues. It supplies accommodation for the State Commissioners.

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- 32 American Sheet & Boiler Plate

- Co., Cleveland, O.—Section from roof ing tile. 227
- 33 House & Davidson, Cleveland, O.—Pair front doors. 227
- 34 Champion Fence Co., Kenton, O.—Wrought and malleable iron fence and gate. 243
- 35 Buringer Bros., Dayton, O.—Ohio coat of arms of galvanized iron, in gable. 242
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### No. 56½. CENTENNIAL POLICE STATION.

This building is situated immediately north of State Avenue and Hungarian War Pavillon, and is used as quarters, etc, of Centennial Guards.

### No. 57. INDIANA STATE BUILDING.

Size, 50 feet by 42 feet.

A two-story frame building, on State Avenue, opposite the United States Government buildings, containing accommodations for the State Commissioners and for visitors from Indiana.

The exhibit consists of a chair made of one hundred different kinds of wood from one county. Specimens of block and coking and cannel coal; flag from natural bed of limestone; black walnut; model of Bailey gun, and a painting by Cox, of the Sierra Valley. The walls are occupied with panels, presenting in brief form the growth and industries of representative counties and cities. In the reading-room is a large map showing railroad system, with margin presenting agricultural and manufacturing statistics.

### No. 57½. SPONGE FISHERS OF TURKEY.

This building contains an exhibit of sponge and fruit, situated on south side of Fountain Avenue, and north of Vermont State building and Turkish Café.

### No. 58. ILLINOIS STATE BUILDING.

Architects, WHEELLOCK & THOMAS.—Size, 60 feet by 40 feet.

Situated on State Avenue, north of the United States Government Buildings; the headquarters of the Illinois Commissioners.

### No. 58½. BETHLEHEM BAZAAR.

Located on Fountain Avenue, adjoining Jerusalem Bazaar, and intended for sale of olive wood.

### No. 59. WISCONSIN STATE BUILDING.

Size, 50 feet by 40 feet.

For the accommodation of the State Commissioners. Located on State Avenue, north of the United States Government Exhibition Buildings.

### No. 59½. SCREW FOG-HORN AND BELL.

Situated at northwest corner of Belmont and State Avenues. Exhibit consists of one caloric engine, which pumps air for fog-horn; tank for air; and stationary engine.

### No. 60. MICHIGAN STATE BUILDING.

Size, 48 feet by 53 feet.

On State Avenue; built of native woods and stone; interior with raised panel work; marble wainscoting; parquette floors, all highly finished. Contains reception, Commissioners', dressing, parcel, three reserve rooms, and ladies' parlor.

**No. 61. NEW HAMPSHIRE STATE BUILDING.**

Size, 30 feet by 40 feet; two projections, 9 feet by 15 feet each.

In the style of an Italian villa, two stories in height, and containing ten rooms, the roof protected by an awning and used for an outlook. This exhibit consists of views of White Mountains scenery, and home of General John Stark, the hero of Bennington.

**No. 62. CONNECTICUT STATE BUILDING.**

Architect, D. R. BROWN, from a design by DONALD G. MITCHELL.—Size, 30 feet by 40 feet.

This cottage is erected in the old Colonial style, somewhat modified, and is designed for the use of the citizens and exhibitors of the State of Connecticut. It is situated on State Avenue, not far distant from the United States Government Exhibition Buildings. Exhibit consists of the Royal Arms, which, before the revolution, hung above the Speaker's chair in the House of Representatives, at Hartford, painted in 1724. Rustic chess stand, ham, nutmegs, frames, etc.; made from the wood of the Charter Oak. Ancient furniture, clock, tile, settee, etc., etc.

**No. 63. MASSACHUSETTS STATE BUILDING.**

Size, 85 feet by 56 feet.

Situated on State Avenue, opposite the New York State Building; is built of wood, two stories high, and contains offices and rooms for Commissioners and visitors.

**No. 64. DELAWARE STATE BUILDING.**

Size, 54 feet by 34 feet.

Built in the Swiss-Gothic style, from native woods of the State. It is occupied by the State Commissioners, the first floor being used for reception-rooms, while the second floor is devoted to business purposes. Is situated on State Avenue, north of the British Commission, opposite the New York State Commission.

**No. 65. MARYLAND STATE BUILDING.**

Size, 92 feet by 60 feet.

For the use of the State Commissioners and visitors. Situated on State Avenue, north of the British Government buildings, and is built of wood, two stories high. This exhibit consists of minerals, woods, building stone, specimens of art by pupils of Maryland Institute and School of Art and Design, portraits of Governors, three engines by Baltimore & Ohio Railroad, models of fish-house and hatching-house.

**No. 67. JAPANESE DWELLING.**

Architect, MATSUO-EHE, Tokio.—Size, 102 feet by 48 feet.

This building, usually called the Japanese Government Building, is intended as a dwelling-house for Japanese workmen. The wood and other articles that enter into its composition, and also the vases and flowers in the surrounding garden, were imported from Japan, and all the work has been done by Japanese artisans. It is situated south of the British buildings.

**No. 68. WEST VIRGINIA STATE BUILDING.**

Size, 115 feet by 40 feet.

Northwest of the Catholic Total Abstinence Fountain, built of wood, two stories high. Headquarters for State Commissioners and visitors from West Virginia. The exhibit consists of twenty pyramids of coal, mineral waters, ores, agricultural products, oils, tobacco, building stone, veneers, salt, glass, and a memorial shield made of seventy-eight varieties of wood, viz.:

**Minerals, Ores, Stone, Mining Products.**

- 1 Central Virginia Copper Mine, Virginia.—Copper ores, iron pyrites, and collection of minerals found on line of Chesapeake & Ohio Railroad. 100
- 2 Stack, I. I., Virginia.—Hematite ore. 100
- 3 Lancaster Pinnacle & Mining Co., Taylor county, West Va.—Carbonate of iron. 100
- 4 McCreery, W., Raleigh county, West Va.—Hematite ore. 100
- 5 Harvey, R. T., Putnam county, West Va.—Iron ore. 100
- 6 Dickinson, H., Pendleton county, West Va.—Hematite ore. 100
- 7 Miller, George, Pendleton county, West Va.—Hematite ores. 100
- 8 Boggs, J. C., Pendleton county, West Va.—Hematite ore. 100
- 9 Davis, Madam, Denesa, Pendleton county, West Va.—Hematite ores. 100
- 10 Garloe, A. E., Marion county, West Va.—Carbonate of iron. 100
- 11 Brown, T. L., Kanawha county, West Va.—Black band iron ore. 100
- 12 Hamilton, Jas., Jefferson county, West Va.—Barytes. 100
- 13 Melville, A. W., Jackson county, West Va.—Iron ore. 100
- 14 Bond, E., Harrison county, West Va.—Iron ore. 100
- 15 McMechen, S. A., Hardy county, West Va.—Iron ores. 100
- 16 Alexander, W. A., Greenbrier county, West Va.—Calc spar. 100
- 17 Lewis, F., & Co., Grant county, West Va.—Calc spar and iron ores. 100
- 18 Hill, Wm., Fayette county, West Va.—Iron ore. 100
- 19 Wilson, Lewis, Barbour county, West Va.—Carbonate of iron. 100
- 20 Stout, H. L., Phillippi, West Va.—Carbonate of iron. 100
- 21 Nickell, G. W., Greenbrier county, West Va.
  - a Iron ore. 100
  - b Coal. 100
- 22 Hovey, W. M., Kanawha county, West Va.
  - a Iron ores. 100
  - b Coals. 101
- 23 McLean, J. L., Putnam county, West Va.
  - a Carbonate of iron. 100
  - b Bituminous coal. 101
- 24 Great Western Mining & Manufacturing Co., Ky.
  - a Iron ore. 100
  - b Coal. 101
- 25 Boteler, A. R., Jefferson county, West Va.
  - a Hematite ore. 100
  - b Marble. 102
- 26 Ruffner, L., & Lewis, J. D., Kanawha county, West Va.
  - a Black flint. 100
  - b Building sandstone. 102
- 27 Armstrong, A., Taylor county, West Va.
  - a Carbonate of iron. 100
  - b Building sandstone. 102
- 28 Capon Iron Works, Hardy county, West Va.
  - a Iron ores. 100
  - b Limestone. 103
- 29 White, C. S., Hampshire county, West Va.
  - a Iron ores. 100
  - b White glass and sand. 104
- 30 Bloomery Iron Works, Hampshire county, West Va.
  - a Iron ores. 100
  - b Fire clay. 104
- 31 Shimp, Jas., Hardy county, West Va.
  - a Iron ores. 100
  - b Pottery clay. 104
- 32 Muenchmeyer, H. & L., West county, West Va.
  - a Iron ore. 100
  - b Pottery clay. 104
- 33 Cantley, R. K., Greenbrier county, Va.
  - a Flint. 100
  - b Semi-bituminous coal. 102
  - c Limestone and silicious coral. 103
- 34 Kingwood Gas, Coal, & Iron Co., Preston county, West Va.
  - a Carbonate of iron. 100
  - b Coal. 101
  - c Fire clay. 104
- 35 Clay, Cecil, Greenbrier county, West Va.
  - a Iron ore. 100
  - b Building sandstones. 102
  - c Clay. 104
  - d Mineral waters. 102
- 36 Elk River Iron & Coal Co., Braxton county, West Va.
  - a Iron ore. 100
  - b Limestone. 103
  - c Sandstone for furnaces. 104
- 37 Mendenhall, U., Morgan county, West Va.
  - a Hematite ore. 100
  - b Limestone. 103
  - c White glass sand. 104
- 38 Willey, W. T., Monongahela county, West Va.
  - a Iron ores. 100
  - b Coals. 102
  - c Building sandstone. 102
  - d Limestone. 103
  - e Fire clay. 104
- 39 Petterkin, G. G., Greenbrier county, West Va.
  - a Iron ores and black oxide of manganese. 100
  - b Mineral waters. 102
- 40 Johnson, J. F., Pendleton county, West Va.
  - a Hematite ores. 100
  - b Mineral water. 102
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- 42 Volcano Oil & Coal Co., Wood county, West Va.—Bituminous coal. 102
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- 48 Beckley, A., Raleigh county, West Va.—Bituminous coal. 101
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- 61 Mill Creek Cannel Coal Co., Kanawha county, West Va.—Cannel coal. 101
- 62 Lewiston Coal Co., Kanawha county, West Va.—Coal. 101
- 63 Monongahela Gas Coal Co., Harrison county, West Va.—Gas coal. 101
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- 69 Gauley, —, Kanawha Coal Co., Fayette county, West Va.—Coal and coke. 101
- 70 Longdale Coal & Iron Co., Fayette county, West Va.—Coal and coke. 101
- 71 Nuttallberg Coal Co., Fayette county, West Va.—Coal and coke. 101
- 72 Stanton Rock Coal Co., Brooke county, West Va.—Bituminous coal. 101
- 73 Brown, T. L., Boone county, West Va.—Cannel coal. 101
- 74 Peytona Cannel Coal Co., Boone county, West Va.—Cannel coal. 101
- 75 Ball, A., Boone county, West Va.—Cannel coal. 101
- 76 Corrathers, L., Taylor county, West Va.  
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- 77 Radcliff, R. S., Marion county, West Va.  
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- 214 Gray, W., Marshall county, West  
Va.—Corn on stalk. 620
- 215 Waddle, J. & M., Ohio county,  
West Va.—Corn. 620
- 216 Wilson, G. W., Ohio county, West  
Va.—Corn. 620
- 217 Dyer, J. P., Pendleton county,  
West Va.—Corn. 620
- 218 Cunningham, S., Pendleton county,  
West Va.—Corn. 620
- 219 Millar, Wm. C., Pendleton county,  
West Va.—Wheat. 620
- 220 Harris, T. M., Ritchie county,  
West Va.—Corn. 620
- 221 Browne, R. H., Pleasants county,  
West Va.—Corn and wheat. 620
- 222 Williams, J. S., Taylor county,  
West Va.—Corn and wheat. 620
- 223 Riley, John, Taylor county, West  
Va.—Wheat. 620
- 224 Sheppard, L., Wirt county, West  
Va.—Corn. 220
- 225 Settle, W., Fayette county, West  
Va.  
a Corn. 620  
b Tobacco. 623

<b>226 Dempsey, J. E., Fayette county,</b> West Va.		<b>238 Carter, W., Fayette county, West</b> Va.—Tobacco.	623
a Wheat, corn, oats, and timothy.	620	<b>237 Dempsey, J. A., Fayette county,</b> West Va.—Tobacco.	623
b Tobacco.	623	<b>238 Ballard, G. W., Lewis county,</b> West Va.—Tobacco.	623
<b>227 Harvey, William T., Fayette</b> county, West Va.		<b>239 Johnson, D. D., Taylor county,</b> West Va.—Tobacco.	623
a Rye, wheat, and corn.	620	<b>240 Staley, T. J., Tyler county, West</b> Va.—Tobacco.	623
b Tobacco.	623	<b>241 Seamon, H., Wheeling, West Va.</b> —Tobacco and cigars.	623
<b>228 Hashbarger, A. P., Fayette county,</b> West Va.			
a Oats.	620		
b Tobacco.	623		
<b>229 Sinclair, G. W., Taylor county,</b> West Va.—Beans.	621		
<b>230 Keesey, I. B., Fayette county,</b> West Va.—Laurel root.	622		
<b>231 O'Neal, Cheavront, &amp; Co., Dod-</b> dridge county, West Va.—Tobacco.	623		
<b>232 Crager, Joe, Fayette county, West</b> Va.—Tobacco.	623		
<b>233 Casady, R. B., Fayette county,</b> West Va.—Tobacco.	623		
<b>234 Nugen, J., Fayette county, West</b> Va.—Tobacco.	623		
<b>235 Braughan, J. J., Fayette county,</b> West Va.—Tobacco.	623		

#### Animal and Vegetable Products.

**242 Oschbacher, John, & Son, Wood**  
county, West Va.—Grape wine. 660

**243 Muenchmeyer, H. & L., Wood**  
county, West Va.—Grape wine. 663

#### Textile Substances of Vegetable or Animal Origin.

**244 Browne, R. H., Pleasants county,**  
West Va.—Flax. 666

**245 Settle, J. G., Fayette county, West**  
Va.—Flax. 666

### No. 69. CANADIAN LOG HOUSE.

Size, 75 feet by 56 feet.

CANADIAN COMMISSION.

See Part IV., page 134.

Is one story high, constructed of logs, and located close by the British Government buildings. It constitutes an exhibit of the timbers of Canada.

### No. 70. MISSOURI STATE BUILDING.

Architect, L. C. MILLER, St. Louis.—Size, 58 feet by 48 feet, with tower.

Location, State Avenue, George's Hill. Headquarters of Board of State Centennial Managers, organized by State Legislature; President, Thomas Allen; Secretary, J. L. Tracy. Exhibits in Main Hall, Education Department, Mineral Annex, Agricultural Hall.

### Nos. 71, 72, 73. BRITISH GOVERNMENT BUILDINGS.

Architect, THOMAS HARRIS, of London.—Size, No. 1, 5000 sup. feet; No. 2, 1200 sup. feet.

These edifices have been erected for the use of the members of the Royal Commission. The large one is the residence of the Commissioners and delegates, while the smaller furnishes accommodations for the members of the staff. They are built in a picturesque, half-timbered style, essentially English, and are located north of Machinery Hall. A bake-house and laundry are also attached to the above.

### No. 74. NEW YORK STATE BUILDING.

Architects, CROFF & CAMP.—Size, 60 feet by 34 feet.

The Commissioners of the State of New York have offices in this building. It is a two-story structure, surrounded by about half an acre of ground. It is situated on State Avenue, north of the British buildings.

### No. 75. COLONEL LIENARD'S GEORAMA.

Designer, COL. LIENARD, Paris.—Size, area 1250 square feet.

An open-air exhibit, models of the cities of Paris and Jerusalem, in gypsum. The contour of the ground is shown, and the streets appear fully delineated. It is in the centre of Fountain Avenue, at the head of the lake.

**No. 76. POP-CORN BUILDINGS.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 41 feet by 32 feet each.  
J. A. BAKER, Dayton, Ohio.

One of these buildings is situated on Fountain Avenue opposite the northern extremity of the lake; the other is on Agricultural Avenue, east of and opposite the New England Farmers' Home and Modern Kitchen. They are devoted exclusively to the sale of pop-corn, and are built of wood, one story high.

**No. 77. CIGAR STANDS.**

The stands are located at various points north of the Avenue of the Republic, and west of Belmont Avenue.

**No. 78. SODA WATER STANDS.**

These stands are situated at various points north of the Avenue of the Republic, and west of Belmont Avenue.

**No. 79. TUNISIAN CAFÉ AND BAZAAR.**

A decorated pavilion with stained glass windows, designed for the display of Tunisian products. Situated on Fountain Avenue, north of Pennsylvania State building.

**No. 80. CHRISTOPHER COLUMBUS MONUMENT.**

Located at corner of Belmont and Fountain Avenues. It was erected by the Columbus Monument Association. It is of colossal size, and represents the Genoese navigator in a standing posture, with the right hand resting on a globe, and the left holding a chart; an anchor and rope indicating his occupation.

**No. 81. DRINKING FOUNTAIN.**

Size, 25 feet in diameter.

Erected by the SONS OF TEMPERANCE of Pennsylvania.

This fountain is built of wood, the structure inclosing it being circular in form, and it is situated at the junction of Fountain and Belmont Avenues. The Singer & Falcott drinking fountain is a marble fountain situated between the Bethlehem Bazaar and Tunisian Café.

**No. 82. "TROIS FRÈRES PROVENÇAUX" RESTAURANT.**

Architect, LEHMAN, of Paris.—Size, 177 feet by 110 feet.

LOUIS GOYARD, Proprietor.

A two-story frame structure, situated on the corner of Belmont and Fountain Avenues. It has large garden surroundings, and is a duplicate of the restaurant of the same name in Paris as regards its management.

**No. 83. NEW YORK "TRIBUNE" BUILDING.**

Architect, E. E. RATH.—Size, 30 feet by 21 feet.

NEW YORK TRIBUNE, New York.

A small octagonal wooden building, with verandas and a high tower-like roof. It is located close to the French Restaurant and the lake, and is used as an office for the correspondents and reporters of "The Tribune."

**No. 84. WORLD'S TICKET OFFICE.**

Architect, H. J. SCHWARZMANN.—Size, 60 feet square.

COOK, SON & JENKINS, London, New York, and Philadelphia.

Situated immediately north of the eastern end of Machinery Hall. It is hexagonal in form, and contains a main hall and four private offices. Tickets to all parts of the world are offered for sale, and ornamental articles manufactured in Palestine are exhibited.

**No. 85. PRESSED FUEL COMPANY'S BUILDING.**

Polygon, 24 feet in diameter.

E. F. LOISEAU, Philadelphia.

Constructed of iron and situated in a garden plot on the Avenue of the Republic, west of the lake and opposite to Machinery Hall. It exhibits the fuel in a state of combustion, to demonstrate its economy and adaptability.

**No. 86. SPANISH GOVERNMENT BUILDING.**

Decagonal, 50 feet in diameter.

A one-story frame building, situated on the Avenue of the Republic, west of the Catholic Total Abstinence Fountain. Intended as headquarters of the Spanish soldiers.

**86½. SPANISH EXHIBITION BUILDING.**

Architect, ALEXANDER B. BARY.—Size, 80 feet by 100 feet.

Constructed of wood, in a style similar to Machinery Hall; adjacent to Spanish Engineers' Pavilion.

**Educational Systems, Methods, and Libraries.**

- 1 Goig & Co., Jaime, Alcira, Province of Valencia.—Books for primary instruction. 300
- 2 Rodríguez Mañanes, Pedro, Zamora.—Explanation of engravings and patterns for cutting garments. 300
- 3 Fábregas y Bru, José, Havana, Island of Cuba.—Writing desk. 300
- 4 Superior Normal School, Salamanca.—Programme for children's schools. 300
- 5 Illera y Marúx, Manuel, Salamanca.—Rational programme for lectures in normal school. 300
- 6 Rodríguez Martín, Vicente, Sequeiros, Province of Salamanca.—Lineal designs. 300
- 7 Sanchez, Pilar, Sevilla.—Objects for the instruction of children. 300
- 8 Board of Primary Instruction, Vitoria, Province of Alava.—Treatise on primary instruction. 300
- 9 Aspiazu, José Antonio de, Vitoria, Province of Alava.—Method of penmanship. 300
- 10 Solano y Viton, Pablo, Valencia.—Books for primary instruction. 300
- 11 Aguilar, Simon, Valencia.—Books for primary instruction. 300
- 12 Solis, Prudencio, Valencia.—Books for primary instruction. 300
- 13 Perales, Baltasar, Valencia.—Books for primary instruction. 300
- 14 Montells y Nadal, Jacinto, Sevilla.—Books for primary instruction. 300
- 15 Gazapo y Loma, Juan Manuel, Madrid.—Syllable book. 300
- 16 Collado, Cayetano, Madrid.—Intuitive instruction. 300
- 17 Borja y Alarcon, Pedro, Madrid.—Geographical stick. 300
- 18 Ladies' Seminary, Madrid.—Work by pupils, and writing by the professors. 300
- 19 Molinero, Enrique, Madrid.—Alphabets. 300
- 20 Gonzalez y Luna, Ildefonso, Jaen.—Specimen of penmanship. 300
- 21 Diaz y Martinez, Manuel, Jerez de la Frontera, Province of Cadiz.—Apparatus for primary instruction. 300
- 22 College of Messrs. Pelfort, Barcelona.—Work done by pupils. 300
- 23 National Institute for the Deaf and Dumb, and Blind, Madrid.—Method of instruction. 303
- 24 Nebreda y Lopez, Carlos, Madrid.—Works for the instruction of the deaf and dumb, and blind. 300
- 25 Institute for the Deaf and Dumb, and Blind, Sevilla.—Documents of the college. 300
- 26 Campillo y Correa, Narciso, Madrid.—Rhetoric and poetry. 306
- 27 Cornellias y Grau, Clemente, Madrid.—French grammar, etc. 306
- 28 Escolapios of San Antonio, Madrid.—Books. 306
- 29 Garcia Ayuso, Francisco, Madrid.—Arabian grammar, study of philology, etc. 306
- 30 Garriga Marrill, Pedro, Madrid.—Tachigraphy. 306
- 31 Giol y Soldevilla, Isidro, Madrid.—Course of photography. 306
- 32 Galdó, Manuel María José de, Madrid.—Manual of natural history. 306
- 33 Institute of Secondary Instruction of San Isidro, Madrid.—Memoirs. 306
- 34 Martinez Cubells, Enrique, Madrid.—Lessons in geometry. 306
- 35 Montero Montero, Antonio, Madrid.—Programmes, catalogues, etc., of the polytechnic school. 306
- 36 Monreal y Ascaso, Bernardo, Madrid.—Course of geography, and history of Spain. 306
- 37 Moya, Ambrosio, Madrid.—Lessons in arithmetic. 306
- 38 National Library, Madrid.—Books published, and awarded works. 306
- 39 Institute of Secondary Instruction of the Noviciate, Madrid.—Complete collection of memoirs. 306
- 40 Pereda y Martinez, Sandalio de, Madrid.—Programme of natural history. 306
- 41 Puerta, Gabriel de la, Madrid.—Treatise on chemistry, medicine, etc. 306

- 42 Ramos Lafuente, Madrid.—Text-book for instruction in natural and physico-chemical sciences. 306
- 43 Salvador y Aznar, Felipe, Madrid.—Manual of book-keeping, etc. 306
- 44 Suñer y Castellet, Emeterio, Madrid.—Course of Latin. 306
- 45 Sanchez Casado, Félix, Madrid.—Bachelor's guide. 306
- 46 Fernandez Cardin, Joaquin Maria, Madrid.—Elements of mathematics. 306
- 47 Vallin y Bustillo, Acisolo F., Madrid.—Text-books of secondary instruction. 306
- 48 Vicuña, Gumersindo, Madrid.—Facultative works. 306
- 49 Institute of Secondary Instruction, Pamplona, Province of Navarra.—Memoirs, catalogues, plans, etc. 306
- 50 Literary University, Oviedo.—Books. 306
- 51 Institute of Secondary Instruction, Palencia.—Memoirs and treatises. 306
- 52 Literary University, Salamanca.—Memoirs, catalogues, discourses, etc. 306
- 53 Institute, Santander.—Books, speeches, catalogues, and photographs. 306
- 54 Menendes & Pintado, Marcelino, Santander.—Geometrical album. 306
- 55 Institute, Segovia.—Text-books. 306
- 56 Literary University, Sevilla.—Opening speeches. 306
- 57 Loscos, Francisco, Castelseras, Province of Teruel.—Herbarium for the study of botany. 306
- 58 Respaldiza, Domingo, Valladolid.—Books. 306
- 59 García Arboleya, José, Havana, Island of Cuba.—Logarithm tables. 306
- 60 Cerero, Rafael, Havana, Island of Cuba.—Treatise on the science of engineering. 306
- 61 Nautical School, Barcelona.—Text-books of the Director. 306
- 62 Fine Art School, Barcelona.—Programmes of instruction. 306
- 63 School of Industrial Engineers, Barcelona.—Tables and projects. 306
- 64 Cornet y Mas, Cayetano, Barcelona.—Compendium of Spanish tachigraphy; 306
- 65 Briz, Francisco Pelayo, Barcelona.—Collection of popular songs. 306
- 66 Miralles & Peris, Manuel, Barcelona.—Plan of studies in a mercantile college. 306
- 67 Veterinary School, Leon.—Memoirs dedicated to the Exhibition at Philadelphia. 306
- 68 Faculty of Medicine, Madrid.—Works. 306
- 69 Mata y Fontanet, Pedro, Madrid.—Medical works and treatises. 306
- 70 Cabello y Aso, Luis, Madrid.—Architectural essays and works. 306
- 71 Grande, José Maria, Madrid.—Works on singing. 306
- 72 Master of San Juan, Aureliano, Madrid.—Treatise on general anatomy. 306
- 73 Busto y Lopez, Andrés, Madrid.—Chirurgical pathology. 306
- 74 Quijano, Lopez, Carlos, Madrid.—Treatise on chirurgical operations. 306
- 75 Cortejerena & Aldebo, Francisco de, Madrid.—Manual of obstetrics. 306
- 76 Sanchez y Merino, Ramon, Madrid.—General treatise on fevers. 306
- 77 Santero y Moreno, Tomás, Madrid.—Medical clinic. 306
- 78 Fernandez de Figares, Manuel, Granada.—Manual of experimental physics. 306
- 79 Local Institute of Secondary Instruction, Baeza, Province of Jaen.—Photographs of its interior and exterior. 306
- 80 Mingote, Policarpo, Leon.—Course of geography. 306
- 81 Ruiz de la Peña, Francisco, Leon.—Latin translation, grammatical system, etc. 306
- 82 Prieto, Anastasio, Logroño.—Regulation for the Normal School. 306
- 83 Saenz Navarrete, José, Logroño.—Documents referring to the foundation and progress of his college. 306
- 84 Royal Academy, Madrid.—Collection of its works. 306
- 85 Carreras, Mariano, Madrid.—Political economy. 306
- 86 Fernandez de Castro, Manuel, Madrid.—Treatise on electricity, metallurgy, etc. 306
- 87 Cortázar, Daniel, Madrid.—Treatise on mathematics. 306
- 88 Comeleran, Francisco A., Madrid.—Treatise on the Latin language. 306
- 89 Chamorro, Rafael, Madrid.—System of explaining heat, light, electricity, etc. 306
- 90 Page, Eugenio Roman, Badajoz.—Register of property. 306
- 91 Graells, Francisco, Barcelona.—Geometric books. 306
- 92 Magza y Jaime, Juan, Barcelona.—Elementary treatise on physiology. 306
- 93 Superior Normal School of Masters, Barcelona.—Books. 306
- 94 Fernandez Fontecha, Francisco, Cádiz.—Course of astronomy and navigation. 306
- 95 Foly y Velasco, Federico, Cádiz.—Text-books. 306
- 96 Offerrall, Javier, Cádiz.—French selections. 306
- 97 Moreno y Espinosa, Alfonso, Cádiz.—Compendium of universal history. 306
- 98 Rubio y Diaz, Vicente, Cádiz.—Elements of mathematics. 306
- 99 Literary University, Santiago, Province of La Coruña.—Books. 306
- 100 Pimentel y Donaire, Miguel, Madrid.—Legislative collection on primary instruction. 306
- 101 Vilella y Font, Sebastian, Madrid.—Fables of Fedro. 306
- 102 Saco y Arce, Juan A., Orense.—Grammar. 306
- 103 Lasala Martinez, Atanasio, Orense.—Elements of arithmetic and algebra. 306
- 104 Gaité Nuñez, Joaquin, Orense.—Elements of arithmetic and geography. 306
- 105 Lucio Gonzalez, Juan, Orense.—Works on philosophy. 306
- 106 Antigüedad, Celestino, Palencia.—Books on primary instruction. 306

- 107 Normal School, Palencia.—Books on primary instruction. 306
- 108 Flores Arrate, Leon, Palencia.—Writing books. 306
- 109 School of Music & Recitation, Madrid.—Memoirs. 306
- 110 Direction of Customs, Madrid.—Statistics. 306
- 111 Romero y Andia, Antonio, Madrid.—Musical instruction. 306
- 112 Lopez Almagro, Antonio, Madrid.—Method of playing the harmonium. 306
- 113 Gil y Justo Moné, Juan, Madrid.—Method of melodies. 306
- 114 Marzo y Feo, Enrique, Madrid.—Method of playing the hoboe. 306
- 115 Mata, Manuel de la, Madrid.—Method of playing the piano. 306
- 116 Nuñez Robres, Lázaro, Madrid.—The music of the people. 306
- 117 Ayllon, Rafael, Madrid.—Musical works. 306
- 118 Borrell, Mariano, Madrid.—Arts and industry. 306
- 119 Rebolledo, José A., Madrid.—Treatise on construction of houses, etc. 306
- 120 Novoa y Lopez, Angel, Pontevedra.—The possible infallibility. 306
- 121 Barrios, Cándido, Madrid.—Works on artillery. 306
- 122 School of Engineers of Highways, Canals, & Ports, Madrid.—Works. 306
- 123 School of Mountain Engineers, San Lorenzo del Escorial, Province of Madrid.—Memoirs of the school. 306
- 124 Corps of Engineers, Madrid.—Books, memoirs, and projects. 306
- 125 School of Mining Engineers, Madrid.—Books. 306
- 126 Veterinary School, Madrid.—Books and pictures. 306
- 127 High School of Architecture, Madrid.—Books, catalogues, and designs. 306
- 128 Conservatory of Arts, School of Commerce, etc., Madrid.—Memoirs, books, designs, studies, etc. 306
- 129 Gonzalez Hidalgo, Joaquin, Madrid.—Scientific works on natural history. 306
- 130 Llerente y Lázaro, Ramon, Madrid.—Compendium of the bibliography of Spanish veterinary system. 306
- 131 Ramirez, Concepción, Madrid.—Treatise on the penal code. 306
- 132 Magas, Juan, Madrid.—Elementary treatise on human physiology. 306
- 133 Seco Baldor, José, Madrid.—Study of the cholera of past centuries. 306
- 134 Calleja Sanchez, Julian, Madrid.—Scientific anatomy. 306
- 135 Bailly Baillière, Carlos, Madrid.—Catalogues of the museums and laboratories of the medical faculty. 306
- 136 Gastaldo, José, Madrid.—Cataract and its treatment. 306
- 137 Jareño de Alarcon, Francisco, Madrid.—Models and plans of the principal schools. 306
- 138 Calvo y Pereyra, Mariano, Madrid.—Architectural works. 306
- 139 Elizalde, José Antonio, Madrid.—Course of descriptive geometry. 306
- 140 Vallin y Bustillo, Acisclo, F., Madrid.—Theory of unknown quantities. 306
- 141 Rodriguez, Eduardo, Madrid.—Manual of general physics. 306
- 142 Maldonado Macanas, Joaquin, Madrid.—General principles of the art of colonization. 306
- 143 Gonzalez Marti, Manuel, Madrid.—Manual of the infantry service. 306
- 144 Arsenal, Madrid.—Military works. 306
- 145 Mechanics' Athenaeum, Tarragona.—Rules. 306
- 146 Society "Centra de Lectura," Reus, Province of Tarragona.—Memoirs and rules. 306
- 147 Gonzalez Hidalgo, Joaquin, Madrid.—Works on the mollusks of Spain, Portugal, and the Pacific. 306
- 148 Garcia Maceira, Antonio, Zamora.—Treatise on the sugar cane. 306
- 149 Literary University, Granada.—Anatomical treatise. 306
- 150 Board of Agriculture, Industry, & Commerce, Oviedo.—Memoirs of the Asturian exhibition, 1863. 306
- 151 Gonzalez Domingo, Cecilio, Salamanca.—Invitations for the Exhibition at Philadelphia. 306
- 152 Cuevas, José Alfonso, Játiva, Province of Valencia.—Synoptic table of the history of Spain. 306
- 153 Normal School, Toledo.—Works on teaching. 306
- 154 Normal School, Valencia.—Works on teaching. 306
- 155 Canan Alegre, Joaquin, Valencia.—Universal history. 306
- 156 Ollero, Andrés F., Valencia.—Descriptive geography and domestic economy. 306
- 157 Hernandez, Agapito, Madrid.—Books on primary education. 306
- 158 Fraile y Valles, Gumersindo, Sevilla.—Arithmetics. 306
- 159 Bastida, Puyals de la, Vicente, Madrid.—Books on primary instruction. 306
- 160 Villegas, Enrique, Córdoba.—Books for primary instruction. 306
- 161 Ollero, Andrés F., Cuenca.—Treatise on education. 306
- 162 Normal School, Guadalajara.—School memoirs. 306
- 163 Diego, Pedro de, Madrid.—History of Spain. 306
- 164 Beason, Eduardo Augusto, Burgos.—Books for elementary instruction. 306
- 165 Normal School, Cádiz.—Text-books. 306
- 166 Aguilar Mayor, Mariano, Lérida.—Books for primary instruction. 306
- 167 Garcia, Nicanor, Villalba, Province of Lugo.—Books for primary instruction. 306
- 168 Central Normal School, Madrid.—Books for primary instruction. 306
- 169 Vallin y Bustillo, Acisclo, Madrid.—Books for primary instruction. 306
- 170 Cardenera, Mariano, Madrid.—Books on primary instruction. 306
- 171 Cuenca, Hermenegildo, Cádiz.—Reading books for schools. 306

- 172 Normal School, Avila.—Books. 306
- 173 Normal High School, Barcelona.—Books. 306
- 174 Tranque y Cassi, Lorenzo, Barcelona.—Book on instruction. 306
- 175 Araño y Majó, Miguel, Barcelona.—Books on primary instruction. 306
- 176 Rodríguez, Eduardo, Lopez, Barcelona.—Method to reform writing. 306
- 177 Tubert y Carrera, Juan, San Martín de Provençals, Province of Barcelona.—Synopsis. 306
- 178 Economical Society of Friends of the Country, Sevilla.—Catalogue and memoirs. 306
- 179 Society for the Protection of Animals and Plants, Cádiz.—Publications. 306
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- 184 Special School for Painting, Sculpture, and Engraving, Madrid.—Memoirs, programmes, and statistics. 306
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- 186 Spanish Society of Natural History, Madrid.—Annals. 306
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- 189 Spanish Society of Professors of Sciences, Madrid.—Rules and reviews. 306
- 190 Economical Society, Madrid.—Copies of the pamphlet "El Centenario" and of the Review. 306
- 191 Association for the Protection of Young Artisans, Madrid.—Memoirs. 306
- 192 Academy of Sciences, Havana, Island of Cuba.—Documents and works. 306
- 193 Royal Academy of Sciences & Arts, Barcelona.—Books and dissertations. 306
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- 197 Castelví, Bartolomé, Zaragoza.—Books. 306
- 198 Chao, Alejandro, Havana, Island of Cuba.—Life of Lord Byron. 306
- 199 Royal Academy of Sciences & Arts, Barcelona.—Rules and memoirs. 306
- 200 Catalanian Agricultural Institute of San Isidro, Barcelona.—Rules and reviews. 306
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- 207 Cuchi, Tomás, Tarragona.—Special treatises. 306
- 208 Ford y Cusido, widow of, Tarragona.—Commercial Review. 306
- 209 Gil Sumblada, Luis, Valencia.—Treatise on stenography. 306
- 210 Pérez M. Miguel, Mariano, Medina del Campo, Province of Valladolid.—Almanacs. 306
- 211 Boras, Gerónimo, Zaragoza.—Dictionary. 306
- 212 Cuseta, Pedro, Zaragoza.—Works on medicine and pharmacy. 306
- 213 Sañs, Juan Antonio, Zaragoza.—Works on medicine and pharmacy. 306
- 214 Mondria, Mariano, Zaragoza.—Works on medicine and pharmacy. 306
- 215 Martínez Anguiano, Pedro, Zaragoza.—Works on medicine and pharmacy. 306
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- 218 Villar García, Martin, Zaragoza.—History of Latin literature. 306
- 219 Puente Villancio, José, Zaragoza.—Manual of the history of the middle ages. 306
- 220 Juncal, Benito, Pontevedra.—Treatise on education. 306
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- 222 Somoza Piñeiro, Ramon, Menza, Province of Pontevedra.—Treatise on syphons applied for the irrigation of pastures. 306
- 223 Angel Crehuet, widow of, Salamanca.—Prolegomena of law. 306
- 224 Navarro Izquierdo, Luciano, Salamanca.—Treatise on geometry. 306
- 225 Oscariz y Lasaga, Victor, Santander.—Pamphlets of literary studies. 306
- 226 Royal Academy of Seville.—Speeches, catalogues, and poetry. 306
- 227 Society of Andalusian Bibliophiles.—Books. 306
- 228 Gironés & Orduña, Seville.—Poetry. 306
- 229 Valdaraque, Rafael, Seville.—Poetry. 306
- 230 Asensio y Toledo, José María, Seville.—Literary works. 306
- 231 Sanchez, Pilar, Seville.—"Ernestina," geographical novel. 306
- 232 Meseguer, Manuel, Amposta, Province of Tarragona.—Text-books. 306
- 233 Alvarez, Romualdo, Tortosa, Province of Tarragona.—Works on instruction. 306
- 234 Avela, Eduardo, Madrid.—Farmers' almanacs. 306
- 235 Flores, José María, Madrid.—Books and maps. 306
- 236 Yebes, Carlos, Madrid.—Books and periodicals. 306

- 237 Mañel, Eugenio, Madrid.—Mineral bibliography. 306
- 238 Fuente, Vicente de la, Madrid.—Life of Santa Teresa de Jesús. 306
- 239 Santamaria de Paredes, Vicente, Madrid.—The defense of right of property. 306
- 240 García Ayuso, Francisco, Madrid.—Historical and dramatical works. 306
- 241 Gaya y Marral, Carlos Maria, Madrid.—Treatise on tachigraphy. 306
- 242 Ruiz de Salazar, Emilio, Madrid.—"El Magisterio Español," periodical, and "La Familia," review. 306
- 243 Massat, Alfredo, Cartagena, Province of Murcia.—Description of metalliferous soil. 306
- 244 Pereiro Rey, Manuel, Orense.—Application of sulphur. 306
- 245 Perez, Joaquin, Orense.—Descriptive pamphlet of the steeple of the cathedral. 306
- 246 Alvarez Gimenez, Emilio, Pontevedra.—Studies on dramas and comedies. 306
- 247 Pimentel, Antonio, Pontevedra.—Pamphlets. 306
- 248 His Majesty the King of Spain, Madrid.—Catalogues. 306
- 249 Carlos, A. de, & Son, Madrid.—Literary works and "La Ilustracion," periodical. 306
- 250 Direction General of Cavalry, Madrid.—Work on breeding horses. 306
- 251 Direction of Public Instruction, Madrid.—Books. 306
- 252 Direction of Hydrography, Madrid.—Books. 306
- 253 Medina & Navarro, Madrid.—Periodicals and books. 306
- 254 Cámara, Miguel, H. de, Madrid.—"La Guirnálda," periodical. 306
- 255 Monasterio, Mariano, Madrid.—Work on construction. 306
- 256 Vergara, Mariano, Madrid.—"El Averiguador," periodical. 306
- 257 Frontaura, Carlos, Madrid.—"Los Niños," review. 306
- 258 Galdós & Cámara, Madrid.—National episodes. 306
- 259 Utor, Luis Maria, Madrid.—Modern agriculture. 306
- 260 Crespo y Pozas, Leonar, Madrid.—Studies. 306
- 261 Liacayo, Augusto, Madrid.—Books on medicine and military surgery. 306
- 262 Almiraante, José, Madrid.—Dictionaries. 306
- 263 Perojo, José del, Madrid.—"Contemporary Review." 306
- 264 Eguilaz Yanguas, Leopoldo, Madrid.—Study on the value of Arabic letters in the Spanish alphabet. 306
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## No. 87. UNITED STATES SIGNAL OFFICE.

This exhibit consists of a field telegraph train, with battery, wire wagons, lance trucks, a portable signal tower, and other signaling appliances. It is situated on State Avenue, opposite the English Government buildings.

## No. 88. TENNESSEE STATE HEADQUARTERS.

A circular tent, containing specimens of minerals, also a portable charcoal stove patented and exhibited by Rice Moore, of Nashville, Tennessee. Situated on State Avenue, between the Maryland and Iowa buildings.

**No. 89. MISSISSIPPI STATE BUILDING.**

Size, 42 feet by 25 feet.

Situated on State Avenue, opposite and west of the Japanese Dwelling. The wood used in this structure is from the State of Mississippi, and numbers some hundred varieties in all.

**No. 90. GEORGE'S HILL RESTAURANT.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 112 feet by 72 feet.

TALMAN & KOHN, Philadelphia.

Located in the western portion of the grounds, on George's Hill, in the vicinity of the State buildings. It is a one-story structure, built of wood, and is also called the Hebrew Restaurant.

**No. 91. BISHOP RICHARD ALLEN'S MONUMENT.**

Size, base 6 feet by 6 feet; height, 16 feet.

Erected in memory of the Rev. Richard Allen, founder and first bishop of the African Methodist Episcopal Church; situated between Fountain and State Avenues, west of the United States Government Buildings.

**No. 92. BOSTON "DAILY ADVERTISER," AND BOSTON "HERALD."**

Size, 29 feet by 16 feet.

A one-story frame building, situated on Fountain Avenue opposite northwest corner of Machinery Hall; used as the headquarters of the correspondents and attaches of the newspapers erecting it.

**No. 93. AMERICAN NEWSPAPER EXHIBITION.**

Architect, M. J. MORILL, Brooklyn, N. Y.—Size, 70 feet by 46 feet.

GEO. P. ROWELL & Co., New York City.

A two-story frame structure of Swiss architecture, on Fountain Avenue, near the lake. It contains a large hall, and a reading-room supplied with newspapers from all parts of the United States. In April, 1876, the United States published regularly 8129 newspapers, a number which exceeds the combined issues of all the other nations of the earth. Regular files of most of these newspapers, and sample copies of all, are alphabetically arranged for exhibition, and a printed catalogue of the whole may be obtained for twenty-five cents. Messrs. George P. Rowell & Co. conduct an agency for the reception of advertisements for all American newspapers, at their office, No. 41 Park Row, New York.

**No. 94. CALIFORNIA STATE BUILDING.**

Size, 55 feet by 105 feet.

A two-story frame building, situated on State Avenue, opposite the British Government buildings. It contains accommodations for the State Commissioners and visitors, also a large hall for the purpose of exhibiting specimens of the agricultural productions of California.

**No. 95. CENTENNIAL FIRE PATROL, No. 1.**

This building is situated at the corner of Belmont and State Avenues, and contains two steam fire engines and one truck.

**No. 96. TURKISH CAFÉ.**

Architect, PIERRE MONTANI.—Size, 51 feet by 65 feet.

**TURKISH COMMISSION.**

An octagonal frame building, with a coffee-room, parlors, and bazaars, situated on a walk between Fountain Avenue and the Avenue of the Republic, near their junction north of Machinery Hall.

**No. 97. FRANK LESLIE'S PAVILION.**

This building is situated at eastern end of lake, on Belmont Avenue, adjoining the office of Cook, Son, & Jenkins. It is octagonal in shape, Moorish in design, and highly ornamented. It is used as an office of Frank Leslie's publications.

**No. 98. IOWA STATE BUILDING.**

Size, 40 feet by 53 feet.

This is a two-story frame building, with portico in front and bay windows on both sides, located on State Avenue between the Missouri and Tennessee buildings, and used as a headquarters for Commissioners from this State.

**No. 99. RHODE ISLAND STATE BUILDING.**

Architects, WM. R. WALKER and T. J. GOLD, Providence, R. I.

A building of combined Swiss and Gothic architecture, situated on State Avenue, north of the Mississippi State building.

**No. 100. VERMONT STATE BUILDING.**

Architect, LAMOS, Ticonderoga, Vt.

A building of Doric architecture, northwest of Machinery Hall, and near Fountain Avenue. It contains an Estey organ, from Brattleboro', Vt., and files of Vermont newspapers.

**No. 101. MEMORIAL HALL (ART GALLERY).**

See Part II., page 9.

**No. 102. ART ANNEX.**

See Part II., page 10.

**No. 103. THE B'NAI B'RITH MONUMENT.**

Erected by the Israelites to religious liberty, and situated between the Art Gallery and its annex.

**No. 104. PHOTOGRAPHIC EXHIBITION BUILDING.**

See Part II., page 137.

**No. 105. VIENNA BAKERY, OR COMPRESSED YEAST BUILDING.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 146 feet by 105 feet.

GAFF, FLEISCHMANN, & CO., Blissville, Long Island, N. Y.

Designed to exhibit the advantages of using compound yeast in baking. It also contains a coffee house.

**No. 106. ANNEX TO MAIN BUILDING (CARRIAGES, STOVES, etc.).**

See Part I., page 374.

**No. 107. SWEDISH SCHOOL-HOUSE AND METEOROGRAPH.**

Architects, ISÆUS & JACOBSSON.—Size, 40 feet by 50 feet.

Situated in the Swedish Government grounds, north of the Main Exhibition Building. A one-story frame house, containing school-rooms and the interior arrangements of a Swedish school-house. The framework for the building was imported from Sweden, and is on exhibition by G. O. Wengstien, of Stockholm.

METEOROGRAPH.—A one-story latticed structure east of Swedish school-house, surmounted by semi-globular cups, connected with apparatus in the interior, showing the velocity of the wind.

**No. 108. JAPANESE BAZAAR.**

This building is situated on Lansdowne drive, immediately north of Department of Public Comfort, and is designed for sale of Japanese wares.

**No. 109. JUDGES' HALL.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 152 feet by 113 feet.

A two-story frame building, situated north of the Main Exhibition Building, containing ten committee rooms and four private rooms for the judges; also one large hall in the centre, and a smaller hall in the rear. It is intended for the accommodation of the International Board of Judges. The President of the Centennial Commission and the Chief of the Bureau of Awards have offices in this building.

**No. 110. CENTENNIAL PHOTOGRAPHIC ASSOCIATION BUILDING.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 150 feet by 30 feet.

The Photographic Association have erected a one-story frame building, located north of the Main Exhibition Building on the east side of Belmont Avenue. It contains one room for the exhibition of photographs, and three rooms for photographers for working purposes.

**No. 111. SHEET METAL PAVILION.**

Size, 22 feet by 40 feet.

Architect, E. C. RYER.

Situated on Lansdowne drive and Belmont Avenue, opposite lake. Marshall Bros. & Co., Girard Avenue below Front Street, Philadelphia, Pa., exhibit the utilization of galvanized and leaded sheets in the construction of this building. American polished, cleaned, and refined sheets, galvanized cemetery and house work, and corrugated iron. The building itself is a specimen of the workmanship of the Kittredge Cornice and Ornament Co., Salem, O., and illustrates the application of sheet metal to architectural purposes.

**No. 112. GERMAN EMPIRE PAVILION.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 83 feet by 33 feet.

Constructed of stone, one story high, furnishing accommodations for the Imperial Commissioners as well as German visitors. It is located on Lansdowne drive, between Belmont and Agricultural Avenues.

**No. 113. PENNSYLVANIA RAILROAD OFFICE.**

Architect, J. M. WILSON, Engineer of Bridges and Buildings, Pennsylvania Railroad Co.—Octagon, 75 feet in diameter.

A two-story frame building, situated on the northeast corner of Belmont Avenue and the Avenue of the Republic, adjoining the Judges' Hall. It is designed for the general ticket office of the four great trunk lines, viz.: New York Central, Erie, Baltimore & Ohio, and Pennsylvania Railroads. Tickets are sold to all points, and information is furnished regarding routes of travel.



**No. 114. OFFICE U. S. CENTENNIAL COMMISSION.**

The western wing of the Public Comfort Building. It contains offices and committee rooms, and conveniences for newspaper correspondents.

**No. 115. BRAZILIAN EMPIRE PAVILION.**

This structure is of wood, situated on Lansdowne drive, adjoining the German Government building, and intended for use of the Brazilian Commission.

**No. 116. THE DAIRY ASSOCIATION BUILDING.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 76 feet by 25 feet; pavilion, 80 feet by 30 feet.

Situated on the north side of Lansdowne Valley, southwest of Horticultural Hall. It is a two-story rustic building, and the surrounding grounds are laid out as a garden in which is a pavilion for the additional accommodation of visitors.

**No. 117. RESTAURANT LAFAYETTE.**

Architect, H. J. SCHWARZMANN.—Size, 130 feet by 30 feet.

This is a two-story wooden building, located northwest of the Art Gallery, between Lansdowne drive and the brook. It is conducted on the French plan.

**No. 118. DEPARTMENT OF PUBLIC COMFORT.**

Architects, BALDERSTON & HUTTON, Philadelphia.—Size, 264 feet by 112 feet.

DEPARTMENT OF PUBLIC COMFORT COMPANY, Limited.

W. MARSH KASSON, Chairman, Philadelphia.

Located on the corner of the Avenue of the Republic and Agricultural Avenue, opposite the northwestern corner of the Main Exhibition Building, and fronting the Esplanade. It is a two-story frame building, containing a reception room and ladies' parlor, free to all, barber shop, coat and baggage room, lunch counter, and lavatories. Tickets for places of amusement are on sale, and a daily register of all visitors is kept. The western section of the building is occupied by the President of the Centennial Commission. Office desk room is afforded to exhibitors. The centre portion of the building is surmounted with an open-air gallery, giving a view of the grounds.

**No. 119. EMPIRE TRANSPORTATION COMPANY'S BUILDING.**

Architects, WILSON BROS. & Co., Philadelphia.—Size, 70 feet by 60 feet.

EMPIRE TRANSPORTATION Co., Philadelphia.

This structure is located north of the eastern end of the Main Exhibition Building, and exhibits by models the method of transportation used by the Empire Transportation Company and its auxiliaries in the United States.

**No. 120. FRENCH GOVERNMENT PAVILION.**

Architect, DE DARTEIN, France.—Size, 100 feet by 50 feet.

DEPARTMENT OF PUBLIC WORKS, France.

Is constructed of brick and iron, and exhibits models in relief and designs of all the public works of France executed during the last few years; also a collection of books and publications relative thereto. It is situated west of the Art Gallery, on Lansdowne drive.

**No. 121. CENTENNIAL FIRE PATROL.**

Architect, H. J. SCHWARZMANN.—Size: (1.) 60 feet by 58 feet. (2.) 84 feet by 74 feet.

The Fire Patrol is accommodated in two buildings, built of wood, one story high.

containing halls for the engines, stalls for the horses, and dormitories for the firemen. The smaller house is at the northeast corner of the Main Exhibition Building, and the larger at the intersection of Lansdowne drive and Belmont Avenue. They are supplied with steam fire engines, hose trucks, ladders, and patent fire extinguishers.

## No. 122. THE PENNSYLVANIA EDUCATIONAL HALL.

Architects, PETERS & BURGER.—Size, 148 feet by 100 feet.

The object of this Hall is the exhibition of the educational interests of the State of Pennsylvania. It is situated north of the Art Gallery, fronting on the Lansdowne drive. The building is octagonal in shape, and contains thirty-two alcoves for the display, a large assembly room, and a reception room. The following summary represents the exhibits:

- 1 **Representations of kindergarten, primary, grammar, and high schools,** with their appropriate furniture, fittings, text-books, apparatus, and work.

Systems of graded schools, with views and models of buildings, charts of statistics, specimens of apparatus, and volumes of scholars' work.

Schools of counties, with county and township maps of school-houses, photographs of buildings, charts of statistics, and scholars' work; plans of school buildings, with systems of heating, lighting, and ventilating, and designs.

Department of Public Instruction charts, showing statistics and outline of public school system, reports, forms, certificates, and laws.

Text-books, school furniture and merchandise, school apparatus and philosophical apparatus; school ornamentation, consisting of a fountain, a series of Rogers' groups, vases, hanging baskets, statues, engravings, etc. 300

- 2 **Academies and Seminaries,** with pictures of buildings, specimens of apparatus, cabinet collections, drawings, and paintings.

Universities and colleges, with pictures of buildings, maps of grounds, views of interior rooms, charts of history and statistics, courses of study, text-books, and productions of professors and alumni.

Technical schools and departments, with drawings, casts, models of bridges, specimens of apparatus, etc. 301

- 3 **Normal Schools.**—Views of buildings and grounds, models, courses and methods of study, catalogues and reports, charts of statistics, and students' work.

Schools of Design.—Drawings, models, etc.

Commercial Schools.—Specimens of penmanship, etc. 302

- 4 **Institution for the Blind.**—Apparatus for teaching, intellectual and industrial work done by the blind.

Institution for the Deaf and Dumb.—Apparatus and methods of teaching. 303

- 5 **Orphan Schools.**—Views of buildings, scholars' intellectual and industrial work, books of record, forms and charts.

School for the Feeble-minded.—Text-books, apparatus, methods, etc. 346

- 6 **Sunday-schools.**—Collections of Sunday-school material, incentives, maps, charts, forms, and models. 348

- 7 **Peirce's Union Business College,** 39 South Tenth street, Philadelphia, Pa. Thomas May Peirce, M.A., Principal and Proprietor; Rev. John Thompson, Business Manager, Residence, 2008 Brandywine street.

BRIEF DESCRIPTION OF THE OBJECTS ON EXHIBITION. *I. Penmanship:* (A.) Seven (7) sets of resolutions engrossed by order of the Philadelphia Board of Public Education, at different times during the past five years, and borrowed from the owners for the purpose of showing the high order of talent employed by the college.

(B.) The improvement in writing of fourteen hundred (1400) pupils of the college, showing the success of the penman as a teacher. (C.) A "reward of merit" engrossed by the penman, the like of which is given once a month to the pupil who makes the most improvement in writing during the month. (D.) A large piece of "Specimens of Spencerian Penmanship," and a set of resolutions, complimentary of the Principal, written by the penman, and a "deceiving picture" made with pen, brush, and pencil, by the professor of drawing, each illustrating the power and ability of the exhortator. (E.) A piece of ornamental penmanship with a bouquet in the centre drawn with the pen, which with the drawings of the work done for the Board of Education, show the penman's skill in pen-drawing. *II. Book-keeping:* (A.) A case of samples of merchandise used by the pupils of the college in the transaction of business among themselves in the Actual Business Department, thus furnishing each pupil with an original and independent set of transactions for his books. (B.) Samples of college currency used in the payment of bills, together with copies of the various business papers used by the students. *III. Course of Instruction:* (A.) A small piece of lettering naming the subjects taught. (B.) A diploma setting forth the subjects of examination for graduation. *IV. Objects of Institution and Classes who patronize it:* A large piece of penmanship setting forth the same in detail.

PARTICULAR MERIT WHICH THE EXHIBITOR CLAIMS FOR HIS EXHIBIT.—*I.* The highest order of talent in the penman in all the departments of work done with the pen. *II.* Superior plans for the improvement of the writing of pupils in addition to the excellence of the teacher. *III.* In genious and successful plans for teaching book-keeping and imparting a sound practical, and economical preparation of young men for business life. 34

**No. 123. TELEGRAPHIC BUILDING.**

Architects, **BALDERSTON & HUTTON**, Philadelphia.—Size, 80 feet by 75 feet.

**DEPARTMENT OF PUBLIC COMFORT COMPANY, Limited.**

**W. MARSH KASSON**, Chairman, Philadelphia.

The reception room of the Public Comfort building opens from the east into the telegraphic department, which furnishes communication with every portion of the world. Is a one-story frame building opposite the northwest corner of the Main Exhibition Building, fronting the Esplanade. All of the instruments and appliances of the latest design are on exhibition and in use.

1 **Phillips, Wm. J.**, Philadelphia, Pa.—Printing telegraph instrument, combining the bell, dial, and printing telegraph in one instrument.

2 **Phillips, Eugene F.**, Providence, R. I.—Covered wire for telegraphic purposes.

3 **Gray, Elisha**, Chicago, Ill.—Electro-harmonic telegraph, including apparatus for transmitting tones and eight or more messages simultaneously.

4 **Atlantic & Pacific Telegraph Co.**, Philadelphia, Pa.—Automatic and duplex telegraph apparatus.

5 **Gray & Barton**, Western Electric Telegraph Co., Chicago, Ill.—Printing telegraph instrument, with unison attachment.

6 **Frost & Hanline**, Philadelphia, Pa.—Automatic thermostat for fire-alarm telegraph.

7 **Brooks, David**, Philadelphia, Pa.—Underground cables for telegraph wires.

8 **Gamewell, J. N., & Co.**, New York, N. Y.—American fire-alarm telegraph, with non-interference repeaters and signal-boxes, and mechanical gong apparatus.

9 **American District Telegraph Co.**, Philadelphia, Pa.—District telegraph signal-boxes, with self-starting registers for messengers, guides, and interpreters.

10 **Philadelphia, Reading, & Pottsville Telegraph Co.**, Philadelphia.—Duplex and Morse telegraph apparatus.

**No. 124. AMERICAN FUSEE COMPANY'S BUILDING.**

Size, 14 feet by 14 feet.

**W. R. DAVENPORT**, New York.

Situated on **Lansdowne drive**, north of the Judges' building.

**No. 125. GLASS MAGAZINE.**

Architect, **H. J. SCHWARZMANN**.—Size, 40 feet by 40 feet.

**KLAUTSHECK, THOMAS, & STUART**, Philadelphia.

This magazine is erected adjoining the Photographic Association Building, opposite the lake. It is constructed mainly of glass from the factories of the above firm, and contains a full assortment of plate and window glass, and glass shades for the accommodation of exhibitors; is two stories high, and is connected by a bridge with Belmont Avenue.

**No. 126. MOORISH VILLA.**

Constructed in Morocco by native workmen; exhibited by **Dr. Max Schmidl**, for the display of native products and fancy articles; conducted by **Abd el Kader ben Katib**. It is situated on **Lansdowne drive**, opposite Sheet Metal Pavilion.

**No. 127. AMERICAN BIBLE SOCIETY PAVILION.**

Architect, **I. C. SIDNEY**.—Size, 17 feet by 23 feet.

Located near **Lansdowne Valley**, south of Horticultural Hall, close to the bridge; oval in shape, and surmounted by a carved roof with a projecting cornice. It bears the inscription, "The Bible without note or comment." In front is an open Bible, and over it the text from **Jeremiah xxii. 29**: "O earth, earth, earth, hear the word of the Lord." Only Bibles and Testaments are sold.

**No. 128. HUNTERS' CAMP.**

"**FOREST AND STREAM**" PUBLISHING CO., N. Y., **WM. C. HARRIS**, Manager.

This camp illustrates sportsmen's life in the backwoods, and contains what is known as a permanent camp, built of logs and bark, with all the appurtenances of hunting and fishing, including portable boats, sporting firearms, rods and fishing

tackle ready for use, portable cooking apparatus, specimens of game birds, a kennel of sporting dogs, etc., etc. An additional feature is a lake or pond stocked with game fish, and a running stream containing brook trout. It is located in the ravine south of Horticultural Hall.

#### **No. 129. OFFICE WATER DEPARTMENT.**

A frame building situated on Belmont Avenue, next to the Glass Magazine.

#### **No. 130. SODA WATER STANDS.**

These are located at various points east of Belmont Avenue and south of Fountain Avenue.

#### **No. 131. CIGAR STANDS.**

These are situated at various points east of Belmont Avenue and south of Fountain Avenue.

#### **No. 132. SINGER SEWING MACHINE BUILDING.**

Architect, JAMES VAN DYKE, Elizabeth.—Size, 81 feet by 56 feet.  
SINGER MANUFACTURING CO., New York City.

Contains an exhibit of every style of machine manufactured by the Singer Manufacturing Company, and samples of work. It is constructed of wood, and is located on Lansdowne drive, north of the Art Gallery.

#### **No. 133. MEDICAL DEPARTMENT.**

Architect, H. J. SCHWARZMANN.—Size, 65 feet by 32 feet 6 inches.

This department is instituted for the immediate gratuitous relief of accidents and sudden cases of illness occurring within the Exhibition grounds. It is located in Lansdowne ravine, equidistant from the Main Building and Horticultural Hall, and contains two wards of three beds each, for male and female patients. An ambulance is provided for the removal of patients to their homes or to city hospitals.

##### *Officers.*

WILLIAM PEPPER, M.D., Medical Director.

THEODORE HERBERTE, M.D., Secretary and Resident Physician.

JACOB ROBERTS, M.D., Member of Staff.

S. W. GROSS, M.D., Member of Staff.

H. C. WOOD, M.D., Member of Staff.

R. G. CURTIN, M.D., Member of Staff.

HAMILTON OSGOOD, M.D., Member of Staff.

DR FORREST WILLARD, M.D., Member of Staff.

#### **No. 134. PORTUGUESE GOVERNMENT BUILDING.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 55 feet by 51 feet.

A one-story wooden structure, with cupola, located on the northeast corner of Agricultural Avenue and Lansdowne drive, and used to accommodate Commissioners and visitors from Portugal.

#### **No. 135. BANKERS' EXHIBIT.**

Architect, JAMES H. WINDRIM, Philadelphia.—Size, 69 feet by 41 feet.

Erected by the banks, bank officers, and bankers of the country for the exhibition of coins and currency. It is located east of the Art Gallery, and between the Photographic Gallery and the Vienna Bakery.

**No. 136. FRENCH GLASS EXHIBIT.****R. DE BERGNE.**

This building is constructed entirely of glass, and situated on Lansdowne drive, adjoining Moorish Villa. Is designed to show window glass, tiles, marble, onyx, etc.

**No. 137. KINDERGARTEN.**

Located north of Carriage Annex on Lansdowne drive, designed to show object teaching. Is a wooden structure, one story high.

**No. 138. CENTENNIAL POLICE STATION.**

Situated at northeast corner of Main Building, designed for accommodation of police, with cells for prisoners.

**No. 139. PHILADELPHIA PAVILION.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 88 feet by 66 feet.

For the accommodation of the municipal government of the city of Philadelphia. It contains a hall and parlors, and a room devoted to the use of the Park Commission. It is a one-story frame building, situated on Lansdowne drive, east of Horticultural Hall.

**No. 140. MUSIC-PAVILION.**

Pavilion with ornamented dome, situated in Lansdowne Ravine, near the bridge. For use of bands.

**No. 141. BURIAL CASKET BUILDING.**

Architect, N. B. GLEASON, Rochester, N. Y.—Size, 42 feet by 22 feet.

SCHUYLER & ARMSTRONG and S. STEIN, Proprietors.

The exhibit consists of various designs of funeral caskets, shrouds, etc. It is a one-story frame house with turrets, and is situated on Lansdowne drive near the bridge, and north of Art Gallery Annex.

**No. 142. PERFORATED METALS.**

This is a one-story brick building with skylight, located between the Carriage Annex and Lansdowne drive, and designed to show the practicability of using perforated window blinds in dwellings.

**No. 143. RUBBER ROOFING.**

This building is situated on Lansdowne drive, between the Carriage Annex and Pennsylvania Educational Hall. It is octagonal in shape, and surmounted by a tower ten feet high. The exhibit consists of rubber roofing.

**No. 144. OFFICE OF CUBAN ACCLIMATION GARDEN.**

See Part IV., page 134.

Architect and Manager, JULES LACHAUME.—Size, 12 feet by 25 feet.

This structure is designed to show tropical produce, seeds, vegetable physiology, and rustic work, and is situated directly south of Horticultural Hall.

**No. 145. NAVAL GROUP.**

This bronze statue is situated on the plaza immediately west of Art Gallery.

**No. 146. DYING LIONESS.**

This bronze work of art is in the plaza due east of Art Gallery.

**No. 151. HORTICULTURAL HALL.**

See Part IV., page 147.

**No. 152. AGRICULTURAL HALL.**

See Part IV., page 9.

**No. 153. WOMEN'S PAVILION.**

See Part III., page 85.

**No. 154. FROBEL'S KINDERGARTEN.**

Architect, JAMES P. SIMS.—Size, 45 feet by 18 feet.

Situated northeast of the Women's Pavilion. Contains specimens of school work and illustrates the operation of kindergarten teaching.

**No. 155. NEW JERSEY STATE BUILDING.**

Architect, CARL PFEIFFER, New York.—Size, 56 feet by 82 feet.

A two-story wooden building erected for the accommodation of the New Jersey State Commissioners, containing offices and private rooms. It is situated on Belmont Avenue, adjacent to the Women's Pavilion. Messrs. Hall & Son, of Perth Amboy, N. J., furnished the brick in the chimney, and Messrs. Maurer & Brevier, of Perth Amboy, the tiles used in the roofing of the building.

**No. 156. THE "SOUTH" RESTAURANT.**

Architects, H. J. SCHWARZMANN.—Size, 182 feet by 92 feet.  
E. MERCER, Atlanta, Ga.

Situated on the northwest corner of State and Belmont Avenues, and is a one-story frame building.

**No. 157. KANSAS AND COLORADO STATE BUILDING.**

Architect, E. F. KARR.—Size, 132 feet square.

This structure is intended for the accommodation of the Commissioners from the States of Kansas and Colorado, and also for exhibition purposes. It is a two-story wooden building, containing an exhibition hall, private rooms and offices, and is situated east of the Southern Restaurant. The Kansas exhibit consists of agricultural products, minerals, silk cocoons, building stone, cotton, plaster of Paris, birds and animals, and the Century Clock.

The Colorado exhibit embraces mineral, geological, and ornithological specimens, petrifications, views of Colorado scenery, the Maxwell cabinets of minerals, birds and animals of the Rocky Mountains, etc.

**No. 158. NEW ENGLAND FARMER'S HOME AND MODERN KITCHEN.**

Size, 49 feet by 35 feet.

MISS E. B. SOUTHWICK, Boston.

A representation of a New England farmer's home 100 years ago, combined with a modern kitchen, thus illustrating 1776 and 1876. It is one story high, and situated on the corner of State and Agricultural Avenues.

**No. 159. THE AMERICAN RESTAURANT.**

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 300 feet by 200 feet.  
TOBIASON & HEILBRUN, Philadelphia.

Situated between Agricultural and Horticultural Halls. The seating capacity is five thousand. The banquet room accommodates six hundred guests. The waiters

speak various languages. There is a pavilion devoted to ice cream, etc. A bill of fare will be served either *à la carte* or *table d'hôte*.

#### **No. 160. GERMAN RESTAURANT.**

Architect, H. J. SCHWARZMANN.—Size, 200 feet by 150 feet.

PHILIP J. LAUBER, Philadelphia.

Contains three acres for garden arrangements, and is situated north of Horticultural Hall, on Lansdowne drive.

#### **No. 161. TEA AND COFFEE PRESS EXTRACT BUILDING.**

Architects, HAYES & MCIVOR, Elmira, N. Y.—Size, 100 feet by 45 feet.

A two-story frame building, composed of four observatories connected by verandas. Located opposite the southeast corner of the Agricultural Building, and devoted to the exhibition of the process of making coffee, tea, and other extracts, by means of pressure caused by the expansion of the materials used.

#### **No. 162. BUTTER AND CHEESE FACTORY.**

Size, 100 feet by 116 feet.

A model factory, three stories high, built of wood, and situated east of the Agricultural Building, between it and Lansdowne drive.

#### **No. 163. SODA WATER STANDS.**

These structures are located at various points east of Belmont and north of Fountain Avenues.

#### **No. 164. CIGAR STANDS.**

These stands are found at various points east of Belmont and north of Fountain Avenues.

#### **No. 165. FARM WAGON ANNEX.**

See Part IV., page 135.

#### **No. 166. POMOLOGICAL ANNEX.**

See Part IV., page 135.

#### **No. 167. BREWERS' BUILDING.**

See Part IV., page 136.

#### **No. 168. APIARY.**

See Part IV., page 140.

#### **No. 169. PACIFIC GUANO COMPANY'S PAVILION.**

MR. JOHN M. GLIDDON, Manager.

This is, in style, similar to a Moorish kiosk. The exhibit consists of various products of the soil, guano in its various processes of manufacture, models of company's works at Wood's Hole and Chisolius Island, fossil remains, etc., while several acres of ground, in close proximity to their pavilion, are planted in cotton, cane, tobacco, etc., to demonstrate the efficacy of their manufacture. The building is situated on Fountain Avenue, east of Women's Pavilion.

#### **No. 170. ANNEX TO HORTICULTURAL HALL, OR SPECIAL FLOWER PAVILION.**

This building is made of glass and iron, located immediately north of Horticultural Hall, and is intended for the display of specialties in flowers.

**No. 171. WIND MILLS.**

See Part IV., page 140.

**No. 172. "PRACTICAL FARMER" (NEWSPAPER OFFICE).**

See Part IV., page 140.

**No. 173. HAY PRESS.**

One Dedrich portable engine, six horse-power, for running hay presses. The presses take in loose hay, baling and banding 20 tons to the hour, or 280 bales.

**No. 174. CENTENNIAL POLICE STATION.**

A frame building situated east of Hay Press and Agricultural Hall, intended for accommodation of Centennial Guards.

**No. 175. SAFETY ELEVATED RAILWAY.**

ROY STONE, Proprietor.

This railroad is situated over Belmont Ravine, north of Horticultural Hall. It was designed by Roy Stone, and first erected at Phoenixville, Pa. Examined and fully approved by eminent engineers. Brought here as an exhibit and for conveyance of passengers under the concession to West End Railroad Co. Intended for rapid transit in cities, or for very cheap country railroad for passengers and freight.

**No. 176. BOILER HOUSE.**

Situated east of Agricultural Hall, and furnishes steam for engine in that building.

**No. 177. VIRGINIA STATE BUILDING.**

A frame structure one story high, with veranda all around, situated on State Avenue east of the Kansas and Colorado building, facing Horticultural grounds.

**No. 178. THE PROTECTIVE FIRE APPARATUS COMPANY OF NEW YORK.**

Size, 8 feet by 10 feet.

This is a one-story wooden building, situated on Agricultural Avenue, west of Agricultural Hall, and is designed to display fire extinguishers.

**No. 179. POP-CORN STAND.**

Situated at corner of Agricultural Avenue, near station of Narrow-Gauge Railroad.

**No. 180. FOUNTAIN OF THE JORDAN L. MOTT IRON WORKS OF NEW YORK.**

Located east of Horticultural Hall. This is an iron fountain 45 feet in diameter and 26 feet high. There are four figures at the base, and the top is surmounted by the design of "Venus Rising from the Sea."

In the interior of the different buildings are located several fountains of varied designs.



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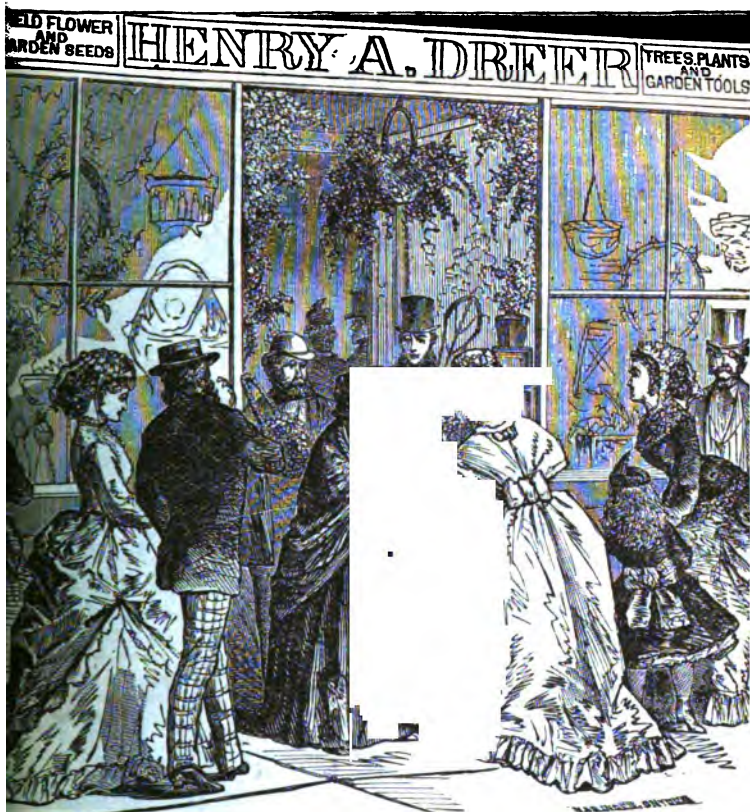
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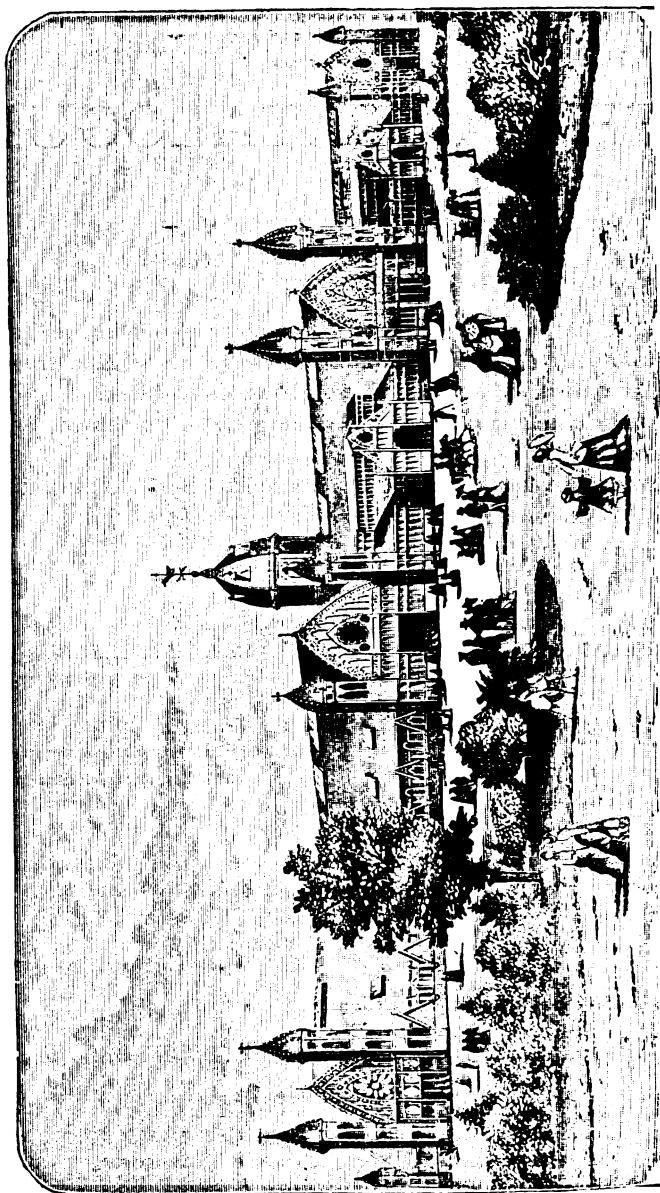
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DEPARTMENT VII.—HORTICULTURE.

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## DEPARTMENT VI. AGRICULTURE.

## DEPT. VII. HORTICULTURE.

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† Luxemburg . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	216	20
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† Japan . . .	128	128	128	128	128	129	129	129	129	129	129	129	129	129	218	20
† Hawaii . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	219	20
† Brazil . . .	68	68	71	72	72	75	75	75	75	75	..	..	..	..	220	20
† Argentine Republic . . .	76	77	81	81	81	86	..	88	..	..	159	..	..	159	221	20
† Chili . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	222	20
† Peru . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	223	20
† Mexico . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	224	20
† Liberia . . .	..	88	88	..	88	88	..	..	..	..	..	..	..	..	225	20
Spain . . .	..	88	88	88	88	88	88	88	88	88	160	160	..	160	226	20
† Philippine Islands . . .	130	130	131	131	131	132	133	133	133	133	160	160	..	..	227	20
† Portugal . . .	89	90	92	..	99	99	120	..	122	..	..	..	..	..	228	20
† Turkey . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	229	20
† Russia . . .	123	123	123	..	124	124	126	127	127	127	..	..	..	..	230	20

\* Metallurgical exhibit of France, page 48.

† Metallurgical exhibit of Liberia, page 88.

† Countries marked thus, have Agricultural exhibits which are installed in the Main Building, and catalogued in Part I.

† A portion of the Chemical exhibit of Brazil, page 75.



# No. 152. AGRICULTURAL HALL.

Size, parallelogram, 820 by 540 feet.

---

*Architect, JAMES H. WINDRIM, Philadelphia.*

*Contractor, PHILIP QUIGLEY, Wilmington, Del.*

*Wrought iron furnished by ALLISON & SONS, Philadelphia.*

*Erectors, BELL BROTHERS.*

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THE Agricultural Exhibition Building stands north of Horticultural Hall, on the eastern side of Belmont avenue. A novel combination of materials is illustrated in its construction. It consists of a long nave crossed by three transepts, all composed of Howe truss arches of Gothic form. The four courts inclosed between the nave and transepts, as also the four spaces at the corners of the building, having the nave and transepts for their sides, are roofed in and form spaces for exhibits. The building covers an area of above ten acres. Stock yards for the exhibition of horses, cattle, sheep, swine, poultry, etc., are in the vicinity of the exhibition grounds.

The contract was made July 26th, 1875, and the building was begun in September 1875, and finished in April, 1876. It cost \$260,000.

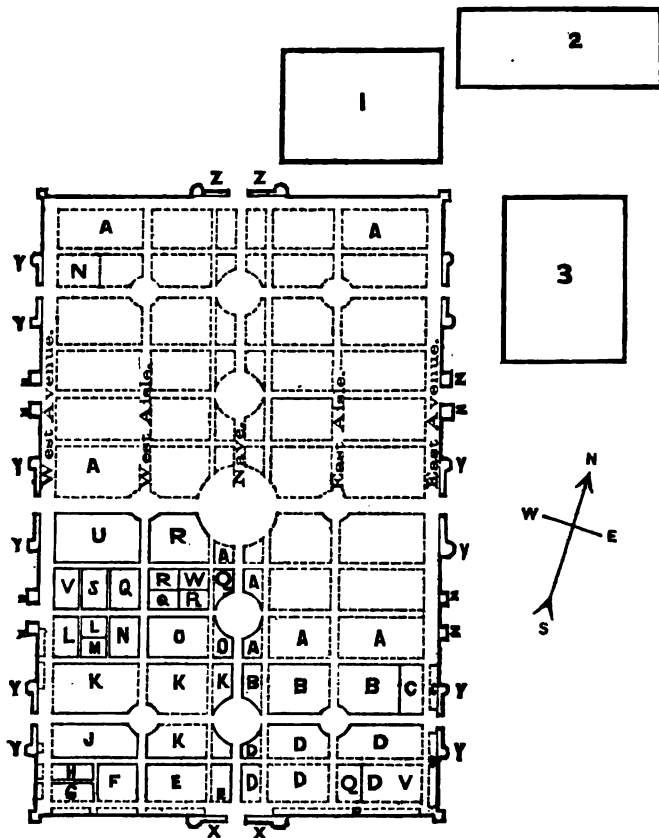
## KEY TO THE NOTATION.

THE location of objects in the Agricultural Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to T—designate the successive ranges of columns, proceeding eastward from the western wall across the width of the building; the figures, the number of the column in each range, counting northwardly from the southern wall, the entire length of the building, from 1 to 28. Thus C 5 is the column in the third range from the west, and the fifth from the southern end of the building. The northeasternmost column is T 28.

The class of the classification (see pages 12-14) to which each exhibit belongs is indicated by the small figures at the end of the line.

# AGRICULTURAL HALL.

Scale, 225 ft. to 1 in.



A United States.  
B Canada.  
C Liberia.  
D England.  
E Germany.  
F Austria.  
G Japan.  
H Venezuela.  
J Netherlands.

K France.  
L Sweden.  
M Denmark.  
N Norway.  
O Brazil.  
P Belgium.  
Q Portugal.  
R Spain and Phil. Islands.  
S Argentine Republic.

U Russia.  
V Italy.  
W Mexico.  
X Dept. of Public Comfort.  
Y Water-closets.  
Z Offices.  
1. Wagon Building.  
2. Brewers' Building.  
3. Pomological Building.

Total Length, 540 ft. Width, 820 ft. Height, 75 ft.

# SYNOPSIS OF THE CLASSIFICATION.

LOCATION.	DEPARTMENTS.	CLASSES.	GROUPS.
MAIN BUILDING.	I. MINING AND METALLURGY.	100—109 110—119 120—129	Minerals, Ores, Stone, Mining Products. Metallurgical Products. Mining Engineering.
	II. MANUFACTURES.	200—205 206—216 217—227 228—234  235—241 242—249 250—257 258—264 265—271 272—279 280—284  285—291 292—296	Chemical Manufactures. Ceramics, Pottery, Porcelain, Glass, etc. Furniture, etc. Yarns and Woven Goods of Vegetable or Mineral Materials. Woven and Felted Goods of Wool, etc. Silk and Silk Fabrics. Clothing, Jewelry, etc. Paper, Blank Books, Stationery. Weapons, etc. Medicine, Surgery, Prothesis. Hardware, Edge Tools, Cutlery, and Metallic Products. Fabrics of Vegetable, Animal, or Mineral Materials. Carriages, Vehicles, and Accessories.
	III. EDUCATION AND SCIENCE	300—309 310—319 320—329 330—339 340—349	Educational Systems, Methods, and Libraries. Institutions and Organizations. Scientific and Philosophical Instruments and Methods. Engineering, Architecture, Maps, etc. Physical, Social, and Moral Condition of Man.
ART GALLERY.	IV. ART.	400—409 410—419 420—429 430—439 440—449 450—459	Sculpture. Painting. Engraving and Lithography. Photography. Industrial and Architectural Designs, etc. Ceramic Decorations, Mosaics, etc.
MACHINERY BUILDING.	V. MACHINERY.	500—509 510—519 520—529 530—539 540—549 550—559 560—569 570—579 580—589 590—599	Machines, Tools, etc., of Mining, Chemistry, etc. Machines and Tools for working Metal, Wood, and Stone. Machines and Implements of Spinning, Weaving, etc. Machines, etc., used in Sewing, Making Clothing, etc. Machines for Printing, Making Books, Paper Working, etc. Motors, Power Generators, etc. Hydraulic and Pneumatic Apparatus. Railway Plant, Rolling Stock, etc. Machinery used in Preparing Agricultural Products. Aerial, Pneumatic, and Water Transportation. Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.
AGRICULTURAL BUILDING.	VI. AGRICULTURE.	600—609 610—619 620—629 630—639 640—649 650—662 665—669 670—679 680—689 690—699	Arboriculture and Forest Products. Pomology. Agricultural Products. Land Animals. Marine Animals, Fish Culture, and Apparatus. Animal and Vegetable Products. Textile Substances of Vegetable or Animal origin. Machines, Implements, and Processes of Manufacture. Agricultural Engineering and Administration. Tillage and General Management.
HORTICULTURAL BUILDING.	VII. HORTICULTURE.	700—709 710—719 720—729 730—739	Ornamental Trees, Shrubs, and Flowers. Hot Houses, Conservatories, Graperies. Garden Tools, Accessories of Gardening. Garden Designing, Construction, and Management.

# CLASSIFICATION.

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## DEPARTMENT VI.—AGRICULTURE.

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### ARBORICULTURE AND FOREST PRODUCTS.

- CLASS 600.—Timber and trunks of trees, entire or in transverse or truncated sections, with specimens of barks, leaves, flowers, seed vessels, and seed.
- Masts, spars, knees, longitudinal sections of trees, railway ties, ship timber, lumber roughly sawn; as planks, shingles, lath, and staves.
- Timber and lumber prepared in various ways to resist decay and combustion; as by injection of salts of copper and zinc.
- CLASS 601.—Ornamental woods used in decorating and for furniture; as veneers mahogany, rosewood, ebony, walnut, maple, and madrona.
- CLASS 602.—Dyewoods, barks, and galls for coloring and tanning.
- CLASS 603.—Gums, resins, caoutchouc, gutta percha, vegetable wax.
- CLASS 604.—Lichens, mosses, fungi, pulu, ferns.
- CLASS 605.—Seeds, nuts, etc., for food and ornamental purposes.
- CLASS 606.—Forestry.—Illustrations of the art of planting, managing, and protecting forests. Statistics.
- CLASS 607.—Fruit trees and shrubs.

### POMOLOGY.

- CLASS 610.—Fruits of temperate and semi-tropical regions; as apples, pears, quinces, peaches, nectarines, apricots, plums, grapes, cherries, strawberries, and melons.
- CLASS 611.—Tropical fruits and nuts, oranges, bananas, plantains, lemons, pineapples, pomegranates, figs, cocoanuts.

### AGRICULTURAL PRODUCTS.

- CLASS 620.—Cereals, grasses, and forage plants.
- CLASS 621.—Leguminous plants and esculent vegetables.
- CLASS 622.—Roots and tubers.
- CLASS 623.—Tobacco, hops, tea, coffee, spices, condiments, herbs.
- CLASS 624.—Seeds and seed vessels.

### LAND ANIMALS.

- CLASS 630.—Horses, asses, mules.
- CLASS 631.—Horned cattle.
- CLASS 632.—Sheep.
- CLASS 633.—Goats, alpaca, llama, camel.
- CLASS 634.—Swine.
- CLASS 635.—Poultry and birds.
- CLASS 636.—Dogs and cats.
- CLASS 637.—Wild animals.
- CLASS 638.—Insects, useful and injurious. Honey bees, cochineal, silk-worms.

## MARINE ANIMALS, FISH CULTURE, AND APPARATUS.

- CLASS 640.**—Marine mammals.—Seals, cetaceans, etc., specimens living in aquaria, or stuffed, salted, preserved in alcohol, or otherwise.
- CLASS 641.**—Fishes, living or preserved.
- CLASS 642.**—Pickled fish, and parts of fish used for food.
- CLASS 643.**—Crustaceans, echinoderms, beche de mer.
- CLASS 644.**—Mollusks, oysters, clams, etc., used for food.
- CLASS 645.**—Shells, corals, and pearls.
- CLASS 646.**—Whalebone, shagreen, fish-glue, isinglass, sounds, fish-oil.
- CLASS 647.**—Instruments and apparatus of fishing.—Nets, baskets, hooks, and other apparatus used in catching fish.
- CLASS 648.**—Fish culture.—Aquaria, hatching pools, vessels for transporting roe and spawn, and other apparatus used in fish breeding, culture, or preservation.

## ANIMAL AND VEGETABLE PRODUCTS.

(Used as food or as materials.)

- CLASS 650.**—Sponges, seaweed, and other growths used for food or in the arts.
- CLASS 651.**—The dairy.—Milk, cream, butter, cheese.
- CLASS 652.**—Hides, furs, and leather, tallow, oil, and lard, ivory, bone, horn, glue.
- CLASS 653.**—Eggs, feathers, down.
- CLASS 654.**—Honey and wax.
- CLASS 655.**—Animal perfumes; as musk, civet, ambergris.
- CLASS 656.**—Preserved meats, vegetables, and fruits. Dried, or in cans or jars. Meat and vegetable extracts.
- CLASS 657.**—Flour; crushed and ground cereals, decorticated grains.
- CLASS 658.**—Starch and similar products.
- CLASS 659.**—Sugar and syrups.
- CLASS 660.**—Wines, alcohol, and malt liquors.
- CLASS 661.**—Bread, biscuits, crackers, cakes, confectionery, cocoa, chocolate, etc.
- CLASS 662.**—Vegetable oils, oil cake.

## TEXTILE SUBSTANCES OF VEGETABLE OR ANIMAL ORIGIN.

- CLASS 665.**—Cotton on the stem, in the boll, ginned, and baled.
- CLASS 666.**—Hemp, flax, jute, ramie, etc., in primitive forms and in all stages of preparation for spinning.
- CLASS 667.**—Wool in the fleece, carded, and in bales.
- CLASS 668.**—Silk in the cocoon and reeled.
- CLASS 669.**—Hair, bristles.

## MACHINES, IMPLEMENTS, AND PROCESSES OF MANUFACTURE.

- CLASS 670.**—Tillage.—Manual implements, spades, hoes, rakes. Animal power machinery, plows, cultivators, horse-hoes, clod-crushers, rollers, harrows. Steam power machinery, plows, breakers, harrows, cultivators.
- CLASS 671.**—Planting.—Manual implements, corn-planters and hand-drills. Animal power machinery, grain and manure drills, corn and cotton planters. Steam power machinery, grain and manure drills.
- CLASS 672.**—Harvesting.—Manual implements; grain-cradles, sickles, reaping-hooks. Animal power machinery, reapers and headers. Mowers, tedders, rakes, hay elevators, and hay loaders. Potato diggers.
- CLASS 673.**—Preparatory to marketing.—Thrashers, clover-hullers, corn-shellers, winnowers, hay, cotton, flax, jute, ramie, wine, oil, and sugar making apparatus. Cleaners and smutters. Horse powers.

CLASS 674.—Applicable to farm economy.—Portable and stationary engines, chaffers, hay and feed cutters, slicers, pulpers, corn mills, farm boilers and steamers, incubators, edged tools, mills, meat choppers.

CLASS 675.—Dairy fittings and appliances.—Churns for hand and power, butter-workers, cans and pails, cheese-presses, vats, and apparatus, ice-cream freezers, cedar-ware.

#### AGRICULTURAL ENGINEERING AND ADMINISTRATION.

CLASS 680.—Laying out and improving farms.—Clearing (stump extractors), construction of roads, draining, irrigating, models of fences, gates, drains, out-falls, dams, embankments, irrigating machinery, stack building and thatching.

CLASS 681.—Commercial fertilizers, phosphatic, ammoniacal, calcareous, etc.

CLASS 682.—Transportation.—Wagons, carts, sleds, harness, yokes, traction engines, and apparatus for road making and excavating.

CLASS 683.—Farm buildings.—Models and drawings of farm houses and tenements, barns, stables, hop-houses, fruit-driers, ice-houses, windmills, granaries, barracks, apiaries, cocooneries, aviaries, abattoirs, and dairies.

#### TILLAGE AND GENERAL MANAGEMENT.

CLASS 690.—Systems of planting and cultivation.

CLASS 691.—Systems of draining and application of manures.

CLASS 692.—Systems of breeding and stock feeding, training.

CLASS 693.—Veterinary surgery and appliances.

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**DAVID LANDRETH & SONS'**  
*Agricultural Warehouse,*  
**21 and 23 South Sixth St., Philadelphia.**

SEED FARMS:  
PENNSYLVANIA, NEW JERSEY, VIRGINIA, WISCONSIN.


---

ESTABLISHED 1810.

**W.A. BROWN & CO.**

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**PARASOLS.**

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498 & 500 Broadway,  
NEW YORK.



Manufactories in Philadelphia. TRADE-MARK.

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**HASELTINE GALLERIES,**  
**1125 and 1127 Chestnut St., Philadelphia.**



# UNITED STATES.

## Forest Products, Pomology, Agricultural Products.

### Arboriculture and Forest Products.

- 1 Begg, Jonathan, Gilroy, Cal.—Collection of coniferæ of the Pacific Coast. E 25. 600
- 2 Peirce, Milton P., Wenonah, N. J.—Native wood. E 26. 600
- 3 Western North Carolina Land Company, Charlotte, N. C.; branch office, 32 S. Third st., Philada.—Lands heavily wooded, rich in minerals, and well-adapted to grazing and agricultural purposes. Hard and soft woods in variety, and of gigantic growth; medicinal herbs, magnetic and hematite iron ores, manganese, gold, mica, etc. E 19. 600
- 4 State of Indiana.—Timber, all kinds found in the State. G 20. 600
- 4a Norcross, Kent, & Co., Philadelphia, Pa.—Shingles and logs. F 26. 600
- 5 State Board of Iowa (collective exhibit), Fairfield, Iowa.—Woods, native and cultivated; wood seeds, soils. C 15. 600
- 5a Rowand, Hillman, & Son, Kirkwood, N. J.—Charcoal. E 26. 600
- 6 Graham, Dorsett, & Co., New York, N. Y.—Cabinet woods. F 28. 600
- 6a State of New Jersey.—Native woods. E 17-18. 600
- 6b State of Wisconsin.—Forest products. F 20-21. 600
- 6c New Hampshire State Centennial Board.—Native woods. E 20-21. 600
- 6d Land Department Central Pacific R. R. Co.—Woods. B 15 to 19. 600
- 7 Woods, Perry, & Co., Cleveland, Ohio.—White pine lumber. F 25. 600
- 8 State of Oregon, Portland, Oregon.—Native woods, medicine roots, and bark; shingles. E 22. 600
- 9 Eastern Burnettizing Co., Boston, Mass.—Burnettized lumber for bridges, wharves, railroads, and all positions where wood is liable to decay. F 26. 600
- 10 State of Delaware (collective exhibit), Dover, Del.—Timber in the rough and dressed. F 17. 600
- 11 Albemarle Swamp Land Co., North Carolina.—Cedar and cypress shingles, staves, etc. F 26. 600
- 12 Davis, Wire, & Co., North Carolina.—Ribbed cedar and cypress shingles. F 28. 600
- 13 State of West Virginia (collective exhibit).—Forest products. F 19. 600
- 4 Gove, E., Bath, Maine.—Basswood panels. F 28. 601
- 4a Cross & Mehling, Grand Rapids, Mich.—Imitation of walnut burl, etc. E 26. 601

- 14b Macatee & Bro., Front Royal, Va.—Ground sumac. F 28. 602
- 14c Williams, R. H., Milford, Del.—Quercitron bark. F 26. 602
- 15 Burk, William B., & Co., Philadelphia, Pa.—Corks and sponges. E 25. 603
- 16 Smythe, Earle, & Co., New York, N. Y.—Crude elastic gums, with botanical specimens of same. E 28. 603
- 16a Day, Austin G., Seymour, Conn.—India-rubber producing plants, from tropical countries; crude India-rubber; crude kerite, or substitute for rubber. H 27-28. 603
- 17 Butz, Alfred L., Philadelphia, Pa.—Machine and hand-cut corks. E 25. 603
- 17a Delta Moss Co., New Orleans, La.—Southern moss. E 25. 604
- 18 Michigan State Agricultural College (collective exhibit).—Forestry. E 25. 606

### Pomology.

- 19 Atlantic Co. for the Culture of Cranberries, Weymouth, N. J.—Cranberries, natural and preserved. J 28. 610
- 20 State Board of Iowa, Fairfield, Iowa.—Apples and pears in wax models. C 15. 610
- 20a Bannih, John H., Egg Harbor City, N. J.—Strawberries and plants; grapes. K 14. 610
- 21 Collings, E. Z., Waterford, N. J.—Cranberries in jars, showing different varieties. C 20. 610
- 21a West Jersey Land & Cranberry Co., Atco, N. J.—Cranberries and vines. C 20. 610
- 21b Michigan Pomological Society, Detroit, Mich.—Apples. (*Nave of Agricultural Building*.) 610
- 21c Bonzano, H., New Orleans, La.—Pecan nuts. H 28. 611

### Agricultural Products.

- 22 State Board of Iowa, Fairfield, Iowa.—Corn, small grains, grass seeds, vegetable seeds, etc. C 15. 620
- 23 Branson, David H., Guthrieville, Pa.—Indian corn. N 10-11. 620
- 24 Beeson, Jacob, & Co., Detroit, Mich.—Samples of grain. J 17. 620
- 25 State of Massachusetts (collective exhibit), Boston, Mass.—Agricultural products. E and F 23. 620
- 26 Possiponti, Angola, Harrisburg, Pa.—Straw for the manufacture of straw-woods. E 15. 620

## Agricultural Products.

- 27** Thompson, C. B., Chillicothe, Ohio.—Broom corn. F 15. 620
- 27a** Schaffer, William L., Philadelphia, Pa.—Maize and sheaf. E 16. 620
- 27b** Western Washington Industrial Association, Philadelphia, Pa.—Grains. D 20. 620
- 27c** Seneca County Agricultural Society, Geneva, N. Y.—Grains, grass, seeds, etc. F 16. 620
- 27d** New Hampshire State Centennial Board. E 20-21.  
 a Corn, wheat, barley, rye, oats, buckwheat, peas, beans, grasses, etc. 620  
 b Potatoes, vegetables. 622
- 27e** State of Wisconsin.—Agricultural products. F 20-21. 620
- 28** U. S. Hullers Oat Co., Williamsport, Pa.—Oats without hull, oat-flour, and feed. H 15. 620
- 28a** Culbertson, J., Brandon, Miss.—Rice and corn. F 15. 620
- 28b** Schoonmaker, Henry, Cedar Hill, N. Y.—Cereals. H 15. 620
- 28c** Hornly, Alex., Craigville, N. Y.—Cereals. G 26. 620
- 28d** Land Department Central Pacific R. R. Co.—Grain. B 15-19. 620
- 28e** Talmadge, Dan., Sons, New York, N. Y.—Carolina rice. G 16. 620
- 28f** Lachicotte, P. R., & Sons, Georgetown, S. C.—Carolina rice. H 16. 620
- 28g** Smith, J. C., Chicago, Ill.—Variety of grains raised in the State. G 22. 620
- 28h** Mohawk & Hudson Manufacturing Co., Hartford, N. Y.—Pressed hay. S 8. 620
- 28i** Montana Territory, Montana.—Cereals. G 15. 620
- 29** State of Indiana (collective exhibit). G 20.  
 a White, red, and amber wheat, oats, rye, barley, Indian corn, grass-seed, etc. 620  
 b Cloverseed, white and colored, butterbeans. 624
- 30** Landreth, D., & Sons, Philadelphia, Pa. H 15.  
 a Cereals, grasses, and tobacco. 620  
 b Field and garden seeds. 624  
 The full and entire exhibit the production of their own seed-farms in Pennsylvania, New Jersey, Virginia, and Wisconsin.
- 31** State Michigan Agricultural College. H and I 20 to 21.  
 a Farm products. 620  
 b Seeds of forest trees. 624
- 32** State of Oregon, Portland, Oregon. E 22.  
 a Native grasses, cultivated grasses, grain in the sheaf. 620  
 b Grain in the sack; cultivated grass-seed. 624
- 33** State of Delaware, Dover, Del. F 17.  
 a Cereals. 620  
 b Seeds. 624
- 34** Ohio State Centennial Board (collective exhibit), Cleveland, Ohio. D and E 16.  
 a Grains, grasses. 620  
 b Seeds. 624
- 35** State of West Virginia (collective exhibit). F 19.  
 a Grasses and agricultural products. 620  
 b Tobacco. 623  
 c Wheat, corn, oats, barley, and rye. 624
- 35a** Felten, A. L., Philadelphia, Pa.—Vegetables. (Centre of same.) 621
- 35b** McNaughton & Co., Philadelphia, Pa.—Bermuda vegetables. J and K 17 621
- 36** Bliss, B. K., & Sons, seedsmen, 34 Barclay street, New York, N. Y.—Potatoes. H 15. 620  
 Collection of two hundred varieties potatoes. Seed potatoes a specialty. The following well-known varieties were first sent out by this firm: "Early Rose," "Late Rose," "King of the Earlies," "Bressee's Prolific," "Peerless," "Climax," "Extra Early Vermont," "Compton's Surprise," "Brownell's Beauty," "Snowflake," "Eureka," "Alpha," and "Ruby."
- 37** Murdoch, Aug., New York, N. Y.—American mustard. I 28. 623
- 38** Bourgeois, Edmund, New Orleans, La.—Perique tobacco, sole agent for Grand Point, St. James, La Perique tobacco and Ledoux's Perique cigarettes. G 25. 623
- 39** Weikel & Smith Spice Co., Philadelphia, Pa.—Mustard, spices, celery-salt, blacking. K 14. 623
- 40** Kinney, Francis S., New York, N. Y.—Cigarettes and tobacco. G 25. 623
- 41** Frishmuth Bros. & Co., Philadelphia, Pa.—Leaf tobacco; fine-cut and smoking tobacco. I 24. 623
- 42** Swank, M. J., Philadelphia, Pa.—Cigars. G 25. 623
- 43** Fell, C. J., & Bro., Philadelphia, Pa.—Spices, mustards, crude and manufactured. J 21. 623
- 44** Stewart, Ralph, & Co., Philadelphia, Pa.—Scotch snuff. G 26. 623
- 45** Holbrook, Edward, Louisville, Ky.—Manufactured tobacco. H 25. 623
- 45a** Sorver, Cook, & Co., Philadelphia, Pa.—Tobacco. F 25. 623
- 45b** Pearson, J. R., & Co., Danville, Va.—Tobacco. N 25. 623
- 46** Israel, J. N., 1338 South St., Philadelphia, Pa.—Cigars. Cigar manufacturer and wholesale dealer in leaf, chewing, and smoking tobacco. G 26. 623
- 47** Boyd, G., & Co., Philadelphia, Pa.—Coffee, green and roasted. C 22. 623
- 48** Wardle, George F., Philadelphia, Pa.—Plug chewing tobacco. G 24. 623
- 49** Blackwell, W. J., & Co., Durham, N. C.—Plug, leaf, and smoking tobacco. H 23. 623
- 50** Batchelor Brothers, Philadelphia, Pa.—Cigars, tobacco-plants. G 23. 623
- 50a** Harrauff & Engle, Elizabethtown, Pa.—Tobacco. G 24. 623
- 50b** Goetze, F. A., & Bro., New York, N. Y.—Snuff. F 25. 623
- 50c** Rieders, M. H., New York, N. Y.—Cigarettes. G 24. 623
- 51** Trowbridge, W. H., Danville, Va.—Chewing and smoking tobacco. G 24. 623
- 52** Shelton Tobacco Curing Co., Asheville, N. C.—Tobacco-hanger. G 24 623

For locations of objects indicated by letter and figure, see Key to Notation, p. 9: ground plan, p. 10.

## Agricultural Products.

- 53 Wilkens, H., & Co., Baltimore, Md.—Smoking tobacco and snuff. Manufacturers of the well-known brands:—"Commodore," Sweet Eighteen, Golden Eagle, "Dairy Queen," "Seal of Virginia," Always Ahead, Queen of North Carolina and Bullhead; "Excelsior," bright and extra Cavendish; Oriental Turkish and "German Imperial;" "Strassburger Snuff," and coarse French Rappee. H 24. 623
- 54 Cilla, Wm., Philadelphia, Pa.—Tobacco packing-box. I 26. 623
- 55 V. Martinez Ybor & Co., Key West, Fla.—Cigars. I 24. 623
- 56 Western North Carolina Land Co., Philadelphia, Pa.—Cereals, fruits, cotton, and tobacco. E 19. 623
- 57 Marburg Bros., Baltimore, Md.—Smoking and leaf tobacco. G 26. 623
- 58 Volinia Farmers' Club, Volinia, Mich.—General farm products, cereals, etc. K 15. 623
- 59 Seidenberg & Co., 84 and 86 Reade st., New York, N. Y. Factory, Key West, Fla.—Key West and Havana cigars. I 23. 623
- 60 Shuck, Samuel, Bedford, Pa.—Antinervous cigars. I 26. 623
- 60a Stewart, Isaac T., Philadelphia, Pa.—Tobacco. F 25. 623
- 60b Richey, Henry A., New York, N. Y.—Plug tobacco, etc. H 24. 623
- 60c Hart, R. T., McComb City, Miss.—Manufactured tobacco. J 25. 623
- 60d Cusick, Linn, & Co., Philadelphia, Pa.—Tea boxes. I 26. 623
- 60e Pickering, Thomas R., Portland, Conn.—Connecticut-seed leaf tobacco. H 25. 623
- 61 Watkins, W. M. & C., Milton, N. C.—Plug and fine leaf tobacco. I 25. 623
- 61a Consolidated Tobacco Co., San Francisco, Cal.—Tobacco. I 24. 623
- 61b Grant, L. J., & Co., Richmond, Va.—Manufactured tobacco. F 25. 623
- 61c Jacoby, S., & Co., New York, N. Y.—Cigars. G and H 24. 623
- 61d Landis, Israel L., Lancaster, Pa.—Tobacco. B 22. 623
- 61e Cochran & Gillespie, Philadelphia, Pa.—Leaf tobacco. H 26. 623
- 62 Bailey, Samuel M., Richmond, Va.—Plug tobacco. I 25. 623
- 62a Hancock, Salmon, & Co., Richmond, Va.—Manufactured tobacco, and labels. J 26. 623
- 62b Lovett, Joseph L., Emille, Pa.—Tobacco. H 24. 623
- 62c Lottier, Lawrence, Richmond, Va.—Manufactured tobacco. H and I 25. 623
- 63 Mayo, P. H., & Brother, Richmond, Va.—Plug tobacco. H 25. 623
- 64 Holbrook, Harry C., Louisville, Ky.—Plug tobacco. G 25. 623
- 65 Turpin & Brother, Richmond, Va.—Plug tobacco. H 25. 623
- 66 Suehnel, Emil J., Philadelphia, Pa.—Cigars. G 24. 623
- 67 Cohen, John B., Philadelphia, Pa.—Cigars. G 24. 623
- 68 Gulden, Charles, New York, N. Y.—German and French mustards. J 19. 623
- 69 Lorillard, P., & Co., New York, N. Y.—Plug and fine-cut chewing tobacco, smoking tobacco and snuffs. F 24. 623
- 70 Lovell & Buffington, Covington, Ky.—Fine-cut chewing tobacco. G 25. 623
- 71 Kimball, Wm. S., & Co., Rochester, N. Y.—Chewing and smoking tobacco, and cigarettes. E 25. 623
- 72 Felgner, F. W., & Son, Baltimore, Md.—Smoking tobacco. Manufacturers of all kinds of smoking tobacco. H 26. 623
- 72a Williams, Thomas C., & Co., Richmond, Va.—Plug tobacco. F 25. 623
- 72b Carroll, John W., Lynchburg, Va.—Chewing and smoking tobacco. H 25. 623
- 73 Gail & Ax, Baltimore, Md.—Smoking and fine-cut chewing tobacco; snuffs. I 26. 623
- 74 Kerbs & Spiess, New York, N. Y.—Cigars. G 26. 623
- 75 Armistead, Louis L., Lynchburg, Va.—Granulated smoking tobacco. I 24. 623
- 76 Mellen, L. F., West Springfield, Mass.—Connecticut-seed leaf tobacco. I 26. 623
- 77 Brito, Joseph Z., & Co., New York, N. Y.—Cigarettes. H 25. 623
- 78 Aices, George, New York, N. Y.—Cigars. H 24. 623
- 78a Haya, Sanchez, & Co., New York, N. Y.—Cigars. I 24. 623
- 79 Sullivan & Burk, Detroit, Mich.—Cigars of home manufacture. H 26. 623
- 80 Gumpert Bros., Philadelphia, Pa.—Cigars. G 28. 623
- 81 Colburn, A., & Co., Philadelphia, Pa.—Mustard, spices, and washing-blue. G 28. 623
- 82 Bonnett, Schenck, & Earle, New York, N. Y.—Spices and mustard. G 28. 623
- 83 Allen, J. F., & Co., Richmond, Va.—Granulated plug and cut smoking tobacco, plug tobacco, cigarettes. H and I 25. 623
- 84 Dean, William G., New York, N. Y.—Mustard. I 28. 623
- 85 Ledoux, C. Z., St. James Parish, La.—Cigarettes. G 25. 623
- 86 Bamberger, H., & Co., Philadelphia, Pa.—Tea caddies and teas. H 28. 623
- 86a Dunn, T. J., & Co., Philadelphia, Pa.—Seed and Havana seed cigars. G 25. 623
- 87 Kühn, von, & Silberman, Philada., Pa.—Tobacco pipes. H 25. 623
- 88 Tobacco-Growers of Penn's Manor, Morrisville, Pa.—Unsweetened tobacco. This tobacco (known as Duck Island) is grown in Bucks Co., Pa., and adjoining islands. We believe it equal in texture, quality, and flavor to any grown in the United States, except that produced from Havana seed. See circular, to be had at case. I 24. 623
- 89 Buist, Robert, jr., Philadelphia, Pa.—Seeds. G 15. 624

## Land and Water Animals, Animal and Vegetable Products.

- 90 Fulton, Joseph W., Libertyville, Iowa.—Corn, grains, grass, and field seeds, vegetable seeds, etc. C 15. 624
- 91 Meehan, Thomas, Philadelphia, Pa.—Seeds of native hardy trees and shrubs. G 16. 624
- 91a Commercial Exchange Association, Philadelphia, Pa.—Flour, grain, seeds, etc. H 15. 624
- 91b State of New Jersey.—Wheat, rye, oats, corn, buckwheat, clover, and grass seeds. E 17-18. 624
- 91c Van Vranken, J. B., Marcellus, N. Y.—Teasels set in frame. H 15. 624
- 91d Claussen, Charles A., New York, N. Y.—Clover seed. G 15. 624
- 91e Johnson, Robbins, & Co., Wethersfield, Conn. Garden seed. G 15. 624
- 92 Thurlow, H., Skaneateles, N. Y.—Teasels. H 15. 624
- 93 Rogers, C. B., Philadelphia, Pa.—Field and garden seeds. I 16. 624
- 94 Red Wing Mills, Red Wing, Minn.—Fife-wheat. I 26. 624
- 95 McLaughlin, J. M., & Son, Skaneateles, N. Y.—Teasels. H 15. 624
- 96 Thorburn, J. M., & Co., New York, N. Y.—Garden, flower, field, and tree seeds. I 16. 624
- 97 Henderson, Peter, & Co., New York, N. Y.—Field and garden seeds. I 16. 624
- 98 Illinois State Board of Agriculture (collective exhibit), Springfield, Ill.—Samples illustrating the agricultural, horticultural, geological, and other resources of the State. G 22. 600-624
- 98a Myers, Ephraim, Creagerstown, Md.—Tree, shrub, and flower seeds. C 15. 624

## Land Animals.

- 99 Michigan State Agricultural College, Lansing, Mich. E 25. 635  
a Birds, useful and injurious. 635  
b Insects, useful and injurious. 638
- 99a Barrett, J. O., Glen Beulah, Wis.—“Old Ab,” the live war-eagle,—carried for three years during the war of the rebellion by the 8th Regt. Wis. Vols. J 17. 635
- 99b Axe, Edwin C., Philadelphia, Pa.—Stuffed birds. A 23. 635
- 99c McIlvaine, John H., Philadelphia, Pa.—Birds. E 26. 635
- 100 Beath, J. R., Philadelphia, Pa.—Stuffed birds. K 23. 635
- 100a Land Dept. Central Pacific R. R. Co.—Birds. B 15-19. 635
- 101 Aldrich, P. W., Readville, Mass.—Stuffed birds. K 23. 635
- 102 Howlett, C. K., Hudson, Ohio.—Stuffed birds of America. K 23. 635
- 103 Brown, Clark D. W., Taxidermist and naturalist, Aurora, Ills.—Stuffed birds artistically arranged, representing the gathering of nations to the Centennial. Orders for groups, artistic or scientific, promptly filled and safely packed. K 24. 635
- 104 Crenshaw, George, Philadelphia, Pa.—Stuffed Hamburg fowls, with their young. K 24. 635

- 104a Hartley, Richard, Philadelphia, Pa. E 28. 635  
a Birds. 635  
b Insects. 638
- 105 Academy of Natural Sciences, Allentown, Pa. K 23. 635  
a Birds with their nests and eggs. 635  
b Quadrupeds. 637
- 106 Rosenbaum, F., Watertown, Wis. a Wisconsin birds. K 23. 635  
b Animals of Wisconsin. 637
- 107 Forster, Christian, Hamilton, Ohio. K 24. 635  
a Mounted birds of North America. 635  
b Mounted animals of North America. 637
- 108 Wallace, John, New York, N. Y.—Stuffed animals. K 24. 635
- 108a Zimmerman, Henry O. R., Georgetown, Del.—Insects. K 24. 638
- 108b Brown, Miss Nellie, Philadelphia, Pa.—Process of hatching and rearing silkworms without mulberries. A 24. 638
- [Special displays of Live-Stock are arranged to be held during September, October, and November.]

## Water Animals, Fish Culture, and Apparatus.

- 109 Ward, Henry A., Rochester, N. Y.—Casts of fossils, zoological specimens, mammals, birds, reptiles, fishes, batrachians, etc., stuffed and mounted. K 26-27. 640
- 109a Crenshaw, George, Philadelphia, Pa.—Stuffed fish. A 23. 641
- 109b Cuvier Club, Cincinnati, Ohio.—Fish. A 18. 641
- 109c Gates, H. C., Wilkesbarre, Pa.—Eels and other live fish. A 22. 641
- 110 Seher, H. L., Philadelphia, Pa.—American and imported leeches. A 22. 642
- 111 Hapgood & Co., San Francisco, Cal.—Preserved salmon. A 19. 642
- 112 Goodale, S. L., Saco, Maine.—Food extract from the juices of fish. J 23. 642
- 113 Rogers, John S., Gloucester, Mass.—Gelatine, isinglass, and glue made from salt-fish skins. A 22. 645
- 114 Norwood, C., & Son, Ipswich, Mass.—Isinglass. A 22. 646
- 114a Wahl Brothers, Chicago, Ill.—Glue. K 22. 646
- 115 Müller, Gustave, Chicago, Ill.—Russian isinglass. A 22. 646
- 116 Norwood, C., & Son, Ipswich, Mass.—Isinglass. A 22. 645
- 117 Fox, George, Jr., Philadelphia, Pa.—Split and glued bamboo trout fly rods. A 27. 646
- 118 Shipley, A. B., & Son, Philadelphia, Pa.—Fishing tackle. A 15. 647
- 119 Terrell, J. A., Bloomfield, Ky.—Angler's transparent float. A 26. 647
- 120 Mansfield, G. H., & Co., Canton, Mass.—Braided fishing lines. Manufacturers of braided fishing lines. Waterproof silk lines in all sizes and lengths suitable for fly fishing; oiled, raw, and fancy silk lines; linen and cotton lines, various sizes. We give personal attention to the business, and guarantee full lengths and best quality. Trade-mark on every line. A 26. 647

## Fish Culture and Apparatus, Animal and Vegetable Products.

- 120<sup>a</sup> Cook, L. C., Philadelphia, Pa.—Trout rod and case. A 27. 647
- 121 Conroy, Bissett, & Malleson, New York, N. Y.—Fishing rods, reels, lines, flies, and fishing tackle. A 28. 647
- 121<sup>a</sup> McBride, Miss Sarah J., Mum-ford, Pa.—Artificial flies for fishing. A 19. 647
- 122 City of Gloucester, Essex co., Mass.—Exhibit of her progress, development, and industries as the largest fishing port in the United States. A and B 20 and 21. 647
- 123 Slack, Mrs. J. H., Bloomsbury, N. J.—Flight of coste trays, combination hatching box. A 24. 648
- 124 Murphy & Broom, Philadelphia, Pa.—Aquarium tanks. C 26. 648
- 125 Clarke, N. W., Northville, Mich.—Fish-hatching apparatus. A 24. 648
- 126 Taxis, E. W., Philadelphia, Pa.—Aquarium tank. A 21. 648
- 126<sup>a</sup> Pacific Guano Co., Boston, Mass.—Aquarium with living fish. A and B 28. 648
- 126<sup>b</sup> Craig, Daniel, Philadelphia, Pa.—Parlor aquarium. A 21. 648
- Animal and Vegetable Products.**
- 127 Crawford & Walton, Philadelphia, Pa.—Bleached sponge. F 26. 650
- 128 American Condensed Milk Co., New York, N. Y.—Condensed milk. J 21. 651
- 128<sup>a</sup> Sensenberger, Wm., Philadelphia, Pa.—Rennet. K 17. 651
- 128<sup>b</sup> American Condensed Milk Co., New York, N. Y.—Preserved milk. J 21. 651
- 129 Napheys, George C., & Son, Philadelphia, Pa.—Refined leaf lard. K 20. 652
- 130 Chalmers, James, & Sons, Williams-ville, N. Y.—Gelatine. K 22. 652
- 131 Wilcox, W. J., & Co., New York.—Refined leaf-lard, lard stearine, and lard oil. K 21. 652
- 132 Stein, Hirsh, & Co., Chicago, Ill.—Egg albumen, blood albumen, casein and dried blood. J 22. 652
- 133 Brown, William H., Peabody, Mass.—Prepared sizing, glue. K 20. 652
- 134 Franklin Glue Works, Pittsburg, Pa.—Glue, neats-foot oil. K 20. 652
- 135 Upton, George, Boston, Mass.—Glue in sheets, broken, ground, and powdered. K 20. 652
- 136 Peter Cooper's Glue Factory, New York, N. Y.—Glue, gelatine, neats-foot oil. K 22. 652
- 137 Lister Brothers, Newark, N. J.—Glue, tallow, etc. C 25. 652
- 138 Cassard Bros. & Co., Baltimore, Md.—Refined lard. K 21. 652
- 138<sup>a</sup> Wahl Brothers, Chicago, Ill.—Gelatine, neats-foot oil, horns, hoofs, and bones. K 22. 652
- 138<sup>b</sup> Butchers' Slaughtering & Melting Association, Brighton, Mass.—Steamed bones, horns, hoofs, etc. K 22. 652
- 138<sup>c</sup> Holcomb, E., Grand Rapids, Mich.—Deer-skin lace leather. K 24. 652
- 138<sup>d</sup> Ward, N., & Co., Boston, Mass.—Cattle bones, tallow, grease, hoofs, neats-foot oil, etc. A 26. 652
- 138<sup>e</sup> Upton, Elijah W., Peabody, Mass.—Glue. K 19. 652
- 139 Meriam Packing Co., Boston, Mass. J 20. 652
- a Hides, tallow, etc. 652
- b Mess beef, concentrated roast beef, and canned turtle. 656
- 140 State of Oregon (collective exhibit), Portland, Oregon. E 22. 652
- a Glue, condensed cider. 652
- b Dried fruit. 656
- c Farina, flour, and oatmeal. 657
- 140<sup>a</sup> Milligan & Higgins Glue Co., N. Y.—Glue. K 19. 652
- 140<sup>b</sup> Stearne, P., Adams, N. Y.—Deer-heads. E 28. 652
- 141 Mellen & Co., New York, N. Y.—Renovated live-geese feathers. H 17. 653
- 142 Harbison, W. C., New Castle, Pa.—White Mountain honey. J 23. 654
- 142<sup>a</sup> Hurd, Lewis, Kewanee, Ill.—Fruit honey. J 24. 654
- 143 Fritsch, Joseph, Carlsstadt, N. J.—Sunbleached wax, and candles. J 23. 654
- 144 Lewis, W. K., & Brothers, Boston, Mass.—Preserves, pickles, catsups, condensed milk, canned fruits, meats, and vegetables. J 22. 656
- 145 Portland Packing Co., Portland, Maine.—Canned vegetables, fruits, meats, poultry, and shell-fish. J 23. 656
- 146 Warner, Rhodes, & Co., Philadelphia, Pa.—Canned fruits and vegetables, fresh and preserved. J 24. 656
- 147 Atmore & Son, Philadelphia, Pa.—Mincemeat and English plum-pudding. J 24. 656
- 148 Slocum, W. H., & Bro., Philadelphia, Pa.—Mincemeat canned goods. J 23. 656
- 150 Anderson & Campbell, Camden, N. J.—Canned fruits, vegetables, fruit-butter, and mincemeat. J 24. 656
- 150<sup>a</sup> Bigelow, Jona, Boston, Mass.—Labeling machine. J 22. 656
- 150<sup>b</sup> Macfarlane, N. H., & Co., New York, N. Y.—Refined lard. K 19. 656
- 150<sup>c</sup> Ashbourne, Alex. P., Philadelphia, Pa. K 17. 656
- a Pulverized cocoanut. 656
- b Cocoanut vinegar. 661
- 150<sup>d</sup> Armstrong, Herran M., & Co., Louisville, Ky.—Pork products. K 22. 656
- 151 Boyd, G., & Co., Philadelphia, Pa.—Dried grain and fruit. C 22. 656
- 153 Reeves, Parvin, & Co., Philadelphia, Pa.—Canned vegetables. J 23. 656
- 154 Wright, Joshua, & Son, Philadelphia, Pa.—Minced meat. J 24. 656
- 155 Wilson Packing Co., Chicago, Ill.—Hermetically sealed cooked meats; corned beef, ham, tongue, and fresh beef. J 23. 656
- 156 Norris, J. W., & Co., New York, N. Y.—Aromatic hams, white-sugar cured and delicately flavored. J 20. 656

## Animal and Vegetable Products.

- 157 Githens & Rexsamer, Philadelphia, Pa.**—Canned fruits and vegetables. J 23. 656
- 158 Du Vivier & Co., New York, N. Y.**—Pickles and delicacies. J 20. 656
- 159 Haller, Ella G., New York, N. Y.**—Choice fruits. J 21. 656
- 160 Gordon & Dilworth, New York, N. Y.**—Preserved domestic and foreign fruits, jellies, canned goods, sauces, syrups, and general table delicacies. J 23. 656
- 161 Chambers, Jos. M., Dover, Delaware.**—Canned goods; dessert fruits a specialty. Strawberries, raspberries, cherries, pineapples, peaches, Bartlett pears, tomatoes, etc.  
The location (Dover, Delaware) of this canning house gives the all-important advantages which are essential to ensure the superior quality and flavor of canned goods.  
The fruit is allowed to fully mature on the trees before being picked, thereby securing a richness of flavor. As the fruit ripens it is carefully picked, pared by hand, and each piece carefully placed in the cans, filling them as full as possible not to mash or bruise the fruit, after which the cans are filled with heavy syrup made from the best granulated sugar.  
No deleterious substances or patent preserving-powders used. All lovers of good desserts send for circular. I 24 and J 22. 656
- 162 Snedeker, David, New York, N. Y.**—Preserved fruit, vegetables, meat, etc. I 24. 656
- 163 McMurray, L., & Co., Baltimore, Md.**—Canned vegetables, fruits, and oysters. J 24. 656
- 163a Ritter, Philip J., Philadelphia, Pa.**—Butter. J 21. 656
- 163b Annapolis Canning Co., Annapolis, Md.**—Canned goods. J 25. 656
- 164 Richardson & Robbins, Dover, Del.**—Canned and preserved fruits, potted meats, etc. J 24. 656
- 165 Fruit-Growers' Trade Co. of New Jersey, New York, N. Y.**—Cranberries, natural and preserved, canned tomatoes, etc. D 24. 656
- 166 Clarkson, F. M., & Son, Bridgeville, Del.**—Evaporated and conserved fruits and vegetables. J 42. 656
- 167 Borden, John G., Brewsters, N. Y.**—Condensed milk, coffee, and cocoa, extract of beef, etc. J 22. 656
- 167a Hazard, E., & Co., New York, N. Y.**—Canned fruits. J 22. 656
- 167b Turner, J., M'f'g Co., New York, N. Y.**—Sauce. K 9. 656
- 167c Greenfield, Nelson, New York, N. Y.**—Flavors and coloring for confectionery. K 27. 656
- 167d Archdeacon, W., Chicago, Ill.**—Pickles, preserves, jellies, sauces, and canned goods. J 22. 656
- 167e Provost, Stephen H., New York, N. Y.**—Tomato, walnut, and mushroom sauce. J 24. 656
- 167f Selser & Brother, Philadelphia, Pa.**—Canned fruits and vegetables; catsups. J 25. 656
- 167g Farmers' Fruit Preserving Co. of Kent co., Del., Lebanon, Del.**—Canned fruits and vegetables. J 24. 656
- 167h Smith, Wright, St. Louis, Mo.**—Table sauce. J 22. 656
- 168 American Desiccating Co., Philadelphia, Pa.**—Crystallized cocoanut. J 24. 656
- 168a Knight, C. P., & Bro., Philadelphia, Pa.**—Fruit jellies. J 25. 656
- 169 Flood, Wm. M., Philadelphia, Pa.**—Mutton in alcohol. A 27. 656
- 170 Gulden, Charles, New York, N. Y.**—Tomato catsup, capers, and olives. J 19. 656
- 171 New York Desiccating Co., New York, N. Y.**—Prepared cocoanut for pies, cakes, etc. I 24. 656
- 172 Libby, McNeal, & Libby, Philadelphia, Pa.**—Canned cooked meats. J 24. 656
- 172a Schepp, Leopold, New York, N. Y.**—Desiccated cocoanut. K 28. 656
- 172b Cook, J. W. & V., Portland, Oregon.**—Canned salmon. J 25. 656
- 173 Reckhow Preserving Co., Paterson, N. J.**—Office 138 Chambers street, New York, N. Y. Trade mark "Monticello."—Pickles, canned goods, salad cream, table sauces, olives, capers manufactured from the best material. Quality guaranteed as represented. J 22. 665
- 174 New York Hop Extract Co., New York, N. Y.**—Hop extract. K 17. 656
- 175 Little Creek Canning Co., Little Creek, Del.**—Canned fruits and vegetables. J 23. 656
- 176 Jones, John Winslow, Portland, Maine.**—Canned green corn, lobster, mackerel, salmon, and beef. B 24. 656
- 177 Cassard, Geo., Baltimore, Md.**—Pepper hams. K 21. 656
- 178 Zane, Norny, & Co., Philadelphia, Pa.**—Fruit-preserving powder. J 23. 656
- 179 Annear, John, & Co., Philadelphia, Pa.**—Pennsylvania sauce. J 21. 656
- 180 La Croix, James, East Medway, Mass.**—Canned vegetables, apples, etc. J 23. 656
- 181 Brooks, C. D., Boston, Mass.**—Pickles, preserves, canned goods, etc. J 21. 656
- 182 MacGowan, John K., Philadelphia, Pa.**—Table sauce. J 21. 656
- 182a King, William, Brooklyn, N. Y.**—Table sauce. J 20. 656
- 182b Bechstein & Co., New York, N. Y.**—Sugar-cured hams, breakfast bacoa, and beef tongues. J 20. 656
- 182c Black & Krebs, Baltimore, Md.**—Sugar-cured hams, refined lard. K 21. 656
- 183 Underwood, W., & Co., Boston, Mass.**—Canned meats, fish, fruits, vegetables, etc.; pickles, catsups, sauces, etc. J 24. 656
- 184 Cowdrey, E. T., & Co., Boston, Mass.**—Canned vegetables, meats, and fruits, pickles, preserves, and jellies. I 21. 656
- 185 Burnham & Morrill, Portland, Maine.**—Canned meats, soups, fish, and vegetables. J 23. 656

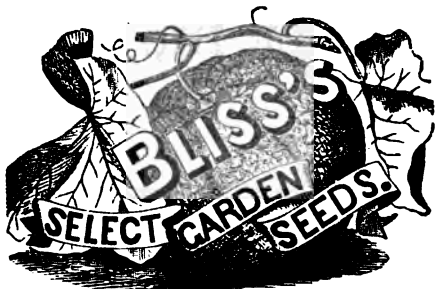
## Animal and Vegetable Products.

- 186 Harris, Milo, Jamestown, N. Y.—Dried fruits. D 23. 656
- 187 Dingee, Squire, Chicago, Ill.—Pickles, chow-chow, and sauces. J 21. 656
- 188 Holgate, Geo., & Co., Oshkosh, Wis.—Preserved fruits and vegetables; preserved meats in joint. J 23. 656
- 189 Williams, John, South Haven, Mich.—Evaporated fruits and vegetables. D 24. 656
- 190 George, P. T., & Co., Baltimore, Md.—Hams, lard, and lard oil. Pork packers and curers of the Maryland hams, and manufacturers of refined lard and lard-oil. Lard prepared for the Brazil and West India markets a specialty. K 21. 656
- 190a Evans Bros., Cincinnati, Ohio.—Hams, shoulders, etc. J 15-16. 656
- 190b Erie Preserving Company, Brant, Erie co., N. Y., and New York city.—Canned fruits and vegetables. K 18 & 19. These "fruits" and "vegetables" are prepared practically in the field where grown. Only fully ripe and carefully-assorted fruits are packed. The tins are uniformly filled full of fruit; the interstices are then filled with spring-water and refined white sugar, which, mingling in the juices of the fruit, forms a heavy, rich syrup. "Vegetables." The preserving-houses are located directly in the midst of a rich, fertile agricultural country, upon the shores of Lake Erie, where sweet corn, sweet peas, tomatoes, etc., are grown in great abundance and perfection, the tempering lake breezes exercising a highly beneficial climatic influence. The peculiar delicacy of flavor these vegetables possess is owing to this favored location and their being perfectly fresh, not allowed to wilt or pass through any heating or sweating process; are invariably packed the same day they are picked, usually within two hours after. "Erie sweet corn" is packed, young and tender, solidly in the cans, in its own milk. Nothing goes into the can save the sweet tender corn. It will always be found the same. 656
- 190c Hemp, Day, & Co., New York, N. Y.—Canned fruits, meats, fish, etc. J 25. 656
- 190d Perry, F. H., Providence, R. I.—Canned fruits. J 21. 656
- 191 Jacob, Chas., jr., & Co., Cincinnati, Ohio.—Hams, shoulders, breakfast bacon, mess pork, mess and dried beef, beef tongues, etc. J 15-16. 656
- 192 Keck, J. L., & Bros., Cincinnati, Ohio.—Pickled meats, lard, etc. J 15-16. 656
- 193 Kahn & Forbes, Cincinnati, Ohio.—Hams, breakfast bacon, and family mess pork. J 15-16. 656
- 194 Evans, Lippincott, & Cunningham, Cincinnati, Ohio.—Bacon, hams, mess pork, lard, and breakfast bacon. J 15-16. 656
- 195 Davis, S., jr., & Co., Cincinnati, Ohio.—Smoked hams, breakfast bacon, bacon sides, shoulders, and mess pork. J 15-16. 656
- 196 Morrison, James, & Co., Cincinnati, Ohio.—Hams, bacon, mess pork, lard, English meats, etc. J 15-16. 656
- 197 Fell, C. J., & Bro., Philadelphia, Pa. J 21. 656  
a Gelatine. 656  
b Self-raising flour. 657
- 198 Cereals Manufacturing Co., New York, N. Y.—Crushed wheat, flour, meal, etc. J 28. 657
- 199 Lagomarsino & Cuneo, Philadelphia, Pa.—Macaroni, vermicelli, fancy paste, farina, etc. J 26. 657
- 200 Outcalt, John, Spotswood, N. J.—Hominy, samp, corn flour from corn grown on Monmouth and Princeton battlefields, Graham flour, wheaten grits, etc. J 26. 657
- 200a Pillsbury, Charles A., & Co., Minneapolis, Minn.—Flour. J 26. 657
- 200b Gambrill, C. A., & Co., Baltimore, Md.—Flour. J 25. 657
- 201 Tyrrell, J. F., & Co., New York, N. Y.—Oatmeal. J 27. 657
- 202 Schumacher, Ferd., Akron, Ohio.—Oatmeal, barley, farina, cracked wheat, flour, hominy, meal, feed, and grain. J 26. 657
- 203 Hecker, George V., & Co. (Croton Mills, Cherry st.), New York, N. Y.—Self-raising flour, buckwheat, griddle-cake flour, farina, and cracked wheat. Hecker's Superlative family flours, which received the First Premium at the World's Fair, London; and the World's Fair, New York. Very popular with those desiring "fine bread and biscuit as can be produced." Hecker's Self-raising Flour, for Bread, Biscuit, Puddings, Cakes, etc., by adding only cold water or milk. This valuable improvement, introduced in 1850, by Hecker & Brother, was awarded the only Gold Medal given for Self-Raising Flour. Hecker's Griddle Cake Self-Raising Flour. For Griddle Cakes, Muffins, Fritters, Waffles, Doughnuts, and for any use where a batter is required. Acid used in making Hecker's Self-Raising Flour. Hecker's Farina, a delicate and appropriate food for all seasons. Hecker's Wheaten Grits, invaluable to dyspeptic and sedentary persons. J 25. 657
- 204 Red Wing Mills, Red Wing, Minn.—Flour. J 26. 657
- 205 Baltimore Pearl Hominy Co., Baltimore, Md.—Breakfast hominy, meal, flour, samp, etc. J 28. 657
- 205a Deener, Cassel, & Welsh, Georgetown, D. C.—Flour. I 25. 657
- 205b Pollock, James, Vincennes, Ind.—Flour. J 24. 657
- 205c Prentzel, Samuel F., Philadelphia, Pa.—Oatmeal and oatina. J 25. 657
- 206 Jewell Brothers, Brooklyn, N. Y.—Plain and self-raising flour, babies' cereal food. J 28. 657
- 206a Heaton, Edward, New Haven, Conn.—Graum. I and J 15. 657
- 206b Taylor, A. A., Toledo, Ohio.—Flour. J 24. 657

## Animal and Vegetable Products.

- 208c Baldwin, Homer, Youngstown, Ohio.—Flour. J 25. 657
- 208d Bedell & Conklin, Brooklyn, N. Y.—Meal, flour, hominy, etc. J 25. 657
- 208e Christian, J. A., & Co. Minneapolis, Minn.—Flour. J 25. 657
- 208f Porter & Mowbray, Winona, Minn.—Flour. J 24. 657
- 208g Eisenmayer & Co., St. Louis, Mo.—Flour. J 25. 657
- 208h Thilenius, G. C., Cape Girardeau, Mo.—Flour. K 23. 657
- 208i Oswego Milling Co., Oswego, N. Y.—Flour. J 25. 657
- 207 Miller, Charles L., Colon, Mich.—Pumpkin flour. J 28. 657
- 208 Stuart & Douglas, Cedar Rapids, Iowa.—Oatmeal. J 22. 657
- 209 Duryea's Glen Cove Starch Co., Glen Cove, N. Y.—Laundry starch, corn starch, and maizena. J 15-16. 658
- 210 Kingsford, T., & Son, Oswego, N. Y.—Laundry starch, corn starch, etc. J 13-14. 658
- 211 Wood, Julius J., & Co., Columbus, Ohio.—Laundry starch, corn starch for food. J 21. 658
- 212 Erkenbrecher, Andrew, Cincinnati, Ohio.—Starch, plain, perfumed, and flavored, St. Bernhard pure, refined pearl, wheaten, pulverized, "cornena" (copyrighted), corn flour for culinary purposes, "gloss sateena" (copyrighted) for laundry use. Manufacturer of perfumed and flavored starch. J 17, 18, 19. 658
- 213 Barnett, William, Philadelphia, Pa.—Wheat starch. J 21. 658
- 213a Fox, George, Cincinnati, Ohio.—Starch. J 22. 658
- 213b Stone & Co., Chicago, Ill.—Zoline, starch gloss. K 17. 658
- 214 Miller, H. J., & Co., West Liberty, Ohio.—Maple sugar and molasses. J 25. 659
- 214a Hutter, Robert, Philadelphia, Pa.—Grape sugar, etc. D 24. 659
- 215 Post, C. C., Burlington, Vt.—Maple sugar and syrup. C 24. 659
- 216 Murdock, Albert L., Boston, Mass. E 25. 659  
a Beet sugar. 659  
b Peat. 660
- 216a McDonald, M. C., Philadelphia, Pa.—Crystal drips syrup. J 25. 659
- 216b New Hampshire State Centennial Board.—Sugar. E 20-21. 659
- 217 Nennich, Henry, Philadelphia, Pa.—Vinegar. G 28. 660
- 217a Agnew, Eisenbeis, & Co., Allegheny, Pa.—Table, pickling, and aromatic vinegars. H 28. 660
- 217b Boden, H. W., & Co., Milwaukee, Wis.—Vinegar. H 28. 660
- 217c Hexamer, F. M., New Castle, N. Y.—Russet cider. K 13. 660
- 218 Chalvin, H. A., New York, N. Y.—Cordials, syrups, and extracts. K 18. 660
- 219 Hincke, Julius, Egg Harbor City, N. J.—Domestic wines. American grape wines, from Hincke's vineyards, all vintages since 1868, highly recommended for table use, as well as for invalids. K 13. 660
- 219a Boden, A. F. W., & Co. (A. F. W. Boden, Henry Riedeburg), 298 Milwaukee st., Milwaukee, Wis.—Vinegar. Manufacturers of cider and white wine vinegar. H 28. 660
- 220 Urbana Wine Co., Hammondsport, N. Y.—Champagne, still wines, and brandy from native grapes. K 12. 660
- 221 Johnson, T. H., Bricksburg, N. J.—Unfermented wines. J 23. 660
- 222 Mills, William H., Sandusky, Ohio.—Still and sparkling domestic wines. K 14. 660
- 223 American Champagne Co., New York, N. Y.—Still and sparkling wines. K 13. 660
- 224 Sattler & Co., Baltimore, Md.—Whisky. K 18. 660
- 224a Speer, Alfred, Passaic, N. J.—Native wines. K 29. 660
- 224b Cooley, John E., & Co., Sing Sing, N. Y.—Native wines. K 16. 660
- 224c Shafer, J. Calvin, New York, N. Y.—Fruit syrups, juices, brandy, and cordial. K 16. 660
- 224d Brecht, C. F., Philadelphia, Pa.—Wines and brandies. K 12. 660
- 224e Smith, Isaac, Centre Island, N. Y.—Apple wine. K 7. 660
- 224f White Elk Vineyards, Keokuk, Iowa.—Wines. K 16. 660
- 225 United Wine-Growers, Egg Harbor, N. J.—Native grape wines. K 8. 660
- 226 American Wine Co., St. Louis, Mo.—Sparkling and still wines. K 14. 660
- 227 Dreyfus, B., & Co., San Francisco, Cal.—California wines and brandies. K 14. 660
- 228 Poeschel, M., & Scherer, Hermann, Mo.—Native wines. K 13. 660
- 229 Kohler & Frohling, San Francisco, Cal.—California wines and brandies. K 10-11. 660
- 230 Keller, J. S., Orwigsburg, Pa.—Wine and whisky. K 13. 660
- 231 Wehr, C. Werk, & Son, Middle Bass Island, Ohio.—Native wines. K 8. 660
- 232 Buena Vista Vinicultural Society, San Francisco, Cal.—Wines and brandy. K 11. 660
- 233 Keller, M., Los Angeles, Cal.—Wines and brandies. K 7. 660
- 234 Pleasant Valley Wine Co., Hammondsport, N. Y.—Champagne, still wines, and brandies. K 14. 660
- 235 Middleton, G. W., & Co., Philadelphia, Pa.—Alcohol, rectified, French, and Cologne spirits; double rectifier. K 16. 660
- 236 Landsberger, J., & Co., San Francisco, Cal.—Champagnes and brandies. J and K 8. 660
- 237 Beller, Jacob, Detroit, Mich.—Native grape wines, currant and elderberry wines. K 7. 660
- 238 Hathaway, Vincent, & Co., Boston, Mass.—Boston ginger ale. K 17. 660
- 239 Hannis Distillery Co., Philadelphia, Pa.—Whisky. K 15. 660
- 240 Hughes, H. R. & M., Pittston, Pa.—Stock ale. K 16 and *Brewers' Building*. 660





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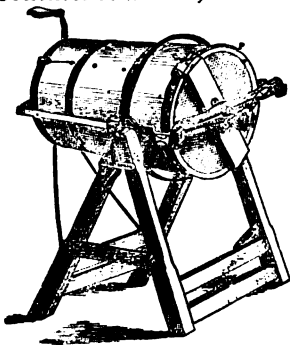
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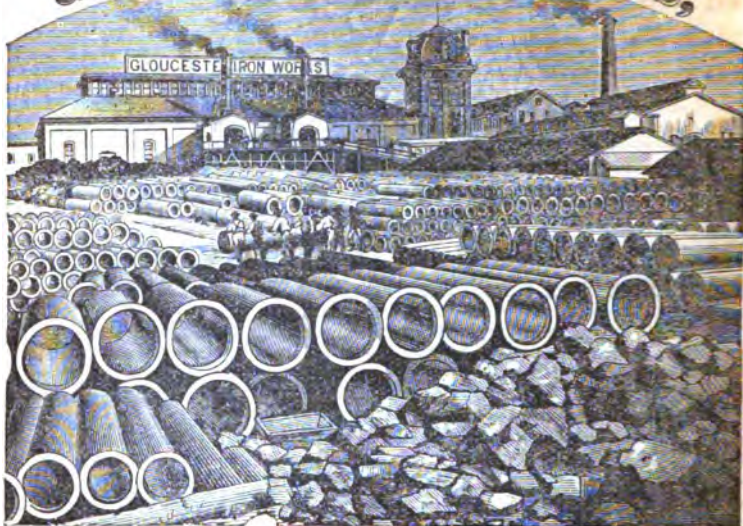
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Benj. Chow, Treas.

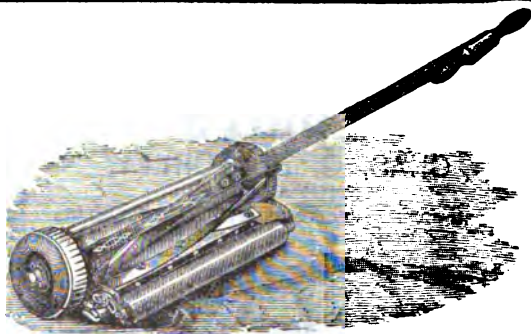
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## Animal and Vegetable Products.

241 Pierce, S. S., & Co., Boston, Mass.  
—Champagne cider. J 23. 660

242 Naglee, H. M., San José, Cal.  
—Brandy. K 10. 660

243 Trommer Extract of Malt Co.,  
Fremont, Ohio.—Extract of barley malt.  
K 18. 660

244 Landauer Bros., Philadelphia, Pa.  
—Rye whisky. K 16. 660

245 Levy, James, & Bro., 27 and 33  
Sycamore street, Cincinnati, Ohio.—  
Bourbon and rye whiskies; specialty,  
Kentucky whiskies, both in bond and tax  
paid. K 16. 660

245a Lawrence, Daniel, & Sons, Bos-  
ton, Mass.—Fum. K 13. 660

245b Le Franc Charles, San José, Cal.  
—Wine and brandies. K 14. 660

246 Pointe aux Peaux Wine Co., Mon-  
roe, Mich.—Native wines. H and J 90.  
660

247 Goetze, F. A., Jersey City, N. J.—  
Native wines. K 13. 660

248 Huck, John A., Chicago, Ill.—Wines.  
K 12. 660

248 Mahé, Gustave, San Francisco, Cal.  
—Golden wine. Extract from the report  
of the Committee of Industrial Exhibition  
of the Mechanics' Institute, San Fran-  
cisco, California: "Mr. Mahé's wine is  
made from what is called the Mission  
Grape, without any admixture of foreign  
grapes. It is singularly light and pure,  
and has obtained the First Premium and  
only Medal awarded to the California  
Wine, at the Tenth Industrial Exhibition  
of the Mechanics' Institute, San Fran-  
cisco. Mr. Mahé's property consists of  
about one hundred acres, forty-five of  
which are planted with vines. Of the  
seventy thousand feet of vineyard, twelve  
thousand are in vines nine years old,  
eight thousand five years old, thirty-five  
thousand in their fourth year, and the  
remaining fifteen thousand are three years  
old. Mr. Mahé estimates that when all  
these vines are in full bearing (which will  
be in two or three years' time), they will  
yield an average of from thirty to thirty-  
five thousand gallons of wine. In 1874  
eighteen thousand feet in bearing yielded  
eight thousand five hundred gallons. The  
whole vineyard is planted with the grape  
known as the California Mission. The  
cellars, which are two and three floors  
deep, have a capacity of a hundred  
thousand gallons in casks and bottles  
together. The wine is to be kept in the  
cellar at least three years, that length of  
time being necessary to give it the great-  
est part of its valuable qualities, and Mr.  
Mahé intends to give it to the consumer  
in glass only, that he may be satisfied it  
cannot be used in any but its naturally  
pure state.

"At the vintage, which is always in  
October, from the 15th to the 30th, the  
grapes, as soon as they have been gathered  
and brought to the press, are stripped  
from the stems. The stems are carefully  
thrown aside, and the grapes fall from  
the stripping machine into a mill, which  
breaks the grape without crushing the  
seeds. From this mill the broken grapes  
fall on the press, from which the juice  
passes directly through India-rubber pipes  
into the casks, arranged on the lowest  
floor to receive it. There the juice fer-

ments, and is drawn off three times the  
first year, twice the second year, and once  
only the third year; and always in Janu-  
ary. The third year the wine is bottled  
in the month of February, and is not  
offered for use till six months later, about  
September.

"The pulp and solid part of the grapes  
left in the press are subjected to the action  
of a hydraulic press of sixty thousand  
pounds' force worked easily by one man.  
The distillation of the Golden Wine  
showed the following per centage of alco-  
hol: vintage of 1869, 12 per cent.; vintage  
of 1870, 11 per cent.; vintage of 1871, 11½  
per cent. It contains, therefore, the same  
proportion of alcohol as the wines of  
Bordeaux."

In order to enable the visitors to the  
Exhibition to appreciate the qualities of  
the wine of California, we have estab-  
lished in Agricultural Hall, near our ex-  
hibit, at the north entrance, a buffet,  
where an excellent lunch, including a  
half bottle of Golden Wine, will be daily  
served up, at the price of one dollar.  
Our fellow-citizens and our foreign friends  
are respectfully invited to honor us with  
a call. L. PONTON DE ARCE, *Manager*.  
K 14. 660

250 Steuben County Vineyard Associ-  
ation, Bath, N. Y.—Native grape wines  
and brandy. K 12. 660

251 Crique, Joseph, Newark, N. J.—  
Wine. K 9. 660

252 Kelley's Island Wine Co., Kelley's  
Island, Ohio.—Champagnes and claret  
wines, etc.; Catawba brandy. K 11. 660

253 Perkins, Stern, & Co., New York,  
N. Y.—California wines and brandies. K  
8. 660

254 Whitman, Stephen F., & Son, Phil-  
adelphia, Pa.—Variety of manufactures  
in confectionery and chocolate. K 25. 661

254a Richardson, J. J., & Co., Philadel-  
phia, Pa.—Confectionery. K 28. 661

254b Miller, George, & Sons, Philadel-  
phia, Pa.—Confectionery. K 25. 661

255 Baker, Walter, & Co., Boston, Mass.  
—Chocolate and cocoa preparations. K  
25. 661

256 Rumford Chemical Works, Provi-  
dence, R. I.—Yeast powder, cream tar-  
tar, acid phosphate, and bread prepara-  
tion. K 21. 661

257 Wilson, Walter G., & Co., Philadel-  
phia, Pa.—Crackers and biscuit. K  
23 and 24. 661

258 Larrabee, E. J., & Co., Albany, N. Y.  
—Biscuit, crackers, etc. K 22. 661

259 Croft, Wilbur, & Co., Philadelphia,  
Pa.—Confectionery, lozenges, glace fruit,  
etc. K 26. 661

260 Morse, G. Byron, Philadelphia, Pa.  
—Plain and fancy cakes, milk and cream  
biscuits, rolls, buns, pastry, etc. K 26. 661

261 Chase & Co., Boston, Mass.—Con-  
fectionery. K 28. 661

262 Hartman, John, Philadelphia, Pa.  
—Crackers, cakes, and biscuits. K  
24. 661

263 Weaver, J. R., Philadelphia, Pa.—  
Confectionery. K 27. 661

264 Schall & Co., New York, N. Y.—  
Ornamental confectionery. K 25. 661

## Animal and Vegetable Products, Textile Substances.

- 265 Mockridge, E., & Co., Philadelphia, Pa.—Azumca, bread, cakes, pastry, etc. K 21. 661
- 266 Greenfried & Strauss, Confectioners, 63 Barclay street, New York, N. Y.—Manufacturers of all kinds of confectionery, such as lozenges, pipe, gumdrops, pan-work, creams, extra imperials, fine almonds, medicated lozenges, chocolates, and pistache goods. Special attention given to the export trade. Goods packed for the South American market in glass and tins. Importers of and dealers in oils and materials for manufacturing confectionery. Manufacturers of XXX powdered sugar. Listas de precios en la lengua castellana á haber en la oficina á Nueva York. K 26. 661
- 267 Dexter, E. M., & Co., Philadelphia, Pa.—Ornamental confectionery. K 27. 661
- 268 Laurent, F., N. W. cor. Arch and Sixth sts., Philadelphia, Pa.—Confectionery and decorative ornaments for cakes. Manufacturer of fine confectionery and ornaments for decorating cakes, such as bride's, centre-pieces, flowers, roses, gum-paste leaves, etc. K 28. 661
- 269 Henry Maillard, New York, N. Y.—Bonbons, chocolate, ornamental confectionery. K 25. 661
- 270 Thorn & Brother, Trenton, N. J.—Crackers, butter, oyster, wine, and scroll biscuit. K 24. 661
- 271 Geilfuss, H., Philadelphia, Pa.—Ornamental confectionery. K 28. 661
- 272 Heide & Wirtz, New York, N. Y.—Almond paste. K 23. 661
- 272a Page, D. L., Philadelphia, Pa.—Candies. K 26. 661
- 272b Palmer Baking-Powder Co., Philadelphia, Pa.—Baking powder. K 24. 661
- 273 Carrick, David, & Co., Philadelphia, Pa.—Crackers, cakes, ship-bread, etc. K 23. 661
- 274 Exton, Adam, & Co., Trenton, N. J.—Butter, oyster, and wine crackers. K 23. 661
- 275 Runkel, H., & Co., Clifton, N. Y.—Chocolate goods and cocoa for confectioners. K 28. 661
- 276 Snider Bros. & Co., Cincinnati, Ohio.—Cream biscuit. K 23. 661
- 277 National Yeast Company, Seneca Falls, N. Y.—Dry-hop yeast cakes. K 17. 661
- 278 Smith's Homeopathic Pharmacy, New York, N. Y.—Alkethrepta, soluble chocolate, and chocolate confections. K 27. 661
- 279 Thurston, Hall, & Co., Cambridgeport, Mass.—Boston crackers. K 21. 661
- 280 Schall & Co., New York, N. Y.—Ornamental confectionery, representing the history of the United States. K 25. 661
- 281b Tayler, D. M., Helena, Ark.—Raw cotton. D 25. 665
- 281c Pritchard, A., Galveston, Texas.—Raw cotton. E 24. 665
- 282 Claghorn, Herring, & Co., Philadelphia, Pa.—The cottons of the world. G 18 and 19. 665
- 282a Cheasham, John T., Bethany, Ga.—Cotton plants. F 24. 665
- 282b Campbell, George, Westminster, Vt.—Wool. E 14. 665
- 282c Maxwell, Edward, Delta, La.—Cotton. E 24. 665
- 282d Cotton Exchange, Memphis, Tenn.—Raw cotton. E 24. 665
- 282e Kellogg, Adam, Kellogg's Landing, La.—Bale of cotton. E 24. 665
- 282f McGaughy, B. R., Verona, Miss.—Cotton. E 24. 665
- 282g Gurney, Wm., Charleston, S. C.—Cotton and cotton plant. J 17. 665
- 282h Maxwell & Goodman, Delta, La.—Raw cotton. H 17. 665
- 282i Levy, Edward S., New Orleans, La.—Raw cotton. J 20. 665
- 282j Sledge, McKay, & Co., Memphis, Tenn.—Raw cotton. E 24. 665
- 282k St. Louis Cotton Exchange, St. Louis, Mo.—Raw cotton. D 24. 665
- 282l New Orleans Cotton Exchange, New Orleans, La.—Raw cotton. 665
- 283 State of West Virginia (collective exhibit).—Hemp and flax. F 19. 666
- 284 George Stratford, Jersey City, N. J.—Oakum. I 17. 666
- 285 Davey, W. O., & Sons, Jersey City, N. J.—Oakum. H 17. 666
- 286 Mills', B., Sons, Jersey City, N. J.—Oakum. H 17. 666
- 287 Collyer, Robert H., Chicago, Ill.—China grass. S 10. 666
- 288 State of Oregon, Portland, Oregon.—Wool and woolen fabrics. E 22. 667
- 289 Bond, George W., Boston, Mass.—Commercial wools. I 19. 667
- 290 Northern Ohio Woollen Mills, Cleveland, Ohio.—All-wool shoddies. I 18. 667
- 290a New Hampshire State Centennial Board.—Wool. E 20-21. 667
- 290b Hiatt, E. J., & Brothers, Chester Hill, Ohio.—Merino wool in fleece. I 24. 667
- 291 Wilkens, Theodore, New York, N. Y.—Hair moss for upholstery. E 26. 669
- 292 Mellen & Co., New York, N. Y.—Curled horse-hair tickings. H 17. 669
- 293 Herzog, J., & Co., San Francisco, Cal.—"Eureka hair" (patented), good and clean substitute for curled hair. "Will not harbor moths or other vermin," cool and healthy material for mattresses and upholstery. H 17. 669
- 294 Franklin Glue Works, Pittsburg, Pa.—Curled hair. K 20. 669
- 295 Wilkens, William, & Co., Baltimore, Md.—Bristles, horse-hair, fibre, curled hair, etc. H 17. 669

## Textile Substances of Vegetable or Animal Origin.

- 281 Murdock, Albert L., Boston, Mass.—Cotton from all countries. E 25. 665
- 281a Mohawk & Hudson Manufacturing Co., Waterford, N. Y.—Pressed cotton. S 8. 665

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.

## Machines, Implements, and Processes of Manufacture.

**Machines, Implements, and Processes of Manufacture.**

- 296 Collins & Co., Hartford, Conn.**—Axes, hatchets, adzes, machetes, railway and mining tools, plows, etc. N 24. 670
- 297 Myers & Ervin, Office, 13 North Fifth st., Philadelphia, Pa.**—Hay-forks, etc.; potato-drags. Manufacturers of hay, manure, spading, coke, charcoal, spall, barley, sluice, tanners', turnip, and oyster forks, potato and manure drags, etc. S 25. 670
- 297a Gibs & Lee, New York, N. Y.**—Steam spader. M 24. 670
- 297b Hopkins, A. P., Bentleysville, Pa.**—Road-scraper. C 21. 670
- 297c Kelsey, John, Yardleyville, Pa.**—Harrow and scraper. L 26. 670
- 297d Maxwell, Rowland, & Co., Holmesburg, Pa.**—Shovels, spades, and scoops. T 26. 670
- 297e Estes, William A., South Boston, Mass.**—Plow, harrow, and stone truck. L 26. 670
- 298 Holland, Edward, Atlanta, Ga.**—Buggy-plow and cultivator. K 24. 670
- 299 Harper, Smith, Philadelphia, Pa.**—Steel hoes, rakes, etc. T 26. 670
- 300 Bean, H. & B. F., Pawling, Pa.**—Corn-marker, cultivator, grain and seed sower. N 19. 670
- 301 Bateman, E. S. & F., Spring Mills, N. J.**—Field and garden cultivators. N 23. 670
- 302 Peppier, Thomas, Hightstown, N. J.**—Plow and cultivator. M 24. 670
- 303 Kissell, Blount, & Co., Springfield, Ohio.**—Corn cultivator. N 24. 670
- 304 Bucher, Gibbs, & Co., Canton, Ohio.**—Plows on revolving tables representing "1776 and 1876." L 24. 670
- 305 Decker, P. H., Chicago, Ill.**—Hollow tooth harrow, and roller mold-board plow. P 26. 670
- 306 Ward, Samuel B., Locust Mount, Va.**—Plow, rake, etc. L 24. 670
- 307 Cooke & Foulke, Shelbyville, Ill.**—Cultivator. M 19. 670
- 308 Park, H. & H., Mt. Victory, Ohio.**—Fork, hoe, and broom handles. T 25. 670
- 309 Stuart & Kirkland, Jackson, Miss.**—Plows. N 24. 670
- 309a Michigan Double Stave Barrel Co., Charlotte, Mich.**—Barrels, etc. R 28. 670
- 309b Holland, Ed., Atlanta, Ga.**—Buggy-plow. K 24. 670
- 310 Deere & Co., Moline, Ill.**—Steel plows, gang and sulky plows, walking corn-cultivators. Q 24. 670
- 311 Morrison Brothers, Fort Madison, Iowa.**—Self-cleaning iron and wood beam plow. L 24. 670
- 312 Sheble & Fisher, Philadelphia, Pa.**—Hay and manure forks, rakes, potato-hooks, and manure-drags. S 25. 670
- 313 Wallace, Samuel J., Keokuk, Iowa.**—Straddle-row cultivator. L 26. 670
- 314 Miller & Wallace, Keokuk, Iowa.**—Texas plow. L 26. 670
- 315 Isaacs, Fred. H., Newark, N. J.**—Sulky gang-plow. M 25. 670
- 316 Cotton, A. C., Vineland, N. J.**—Reversible scuffle-hoe. D 17. 670
- 317 Heydrick, W. H. H., Philadelphia, Pa.**—Steam plow, and farm engine. L 23. 670
- 318 Myer, B., Newark, N. J.**—Plows. N 25. 670
- 319 New York Manufacturing Co., New York, N. Y.** P 17.  
a Plow, cultivator, etc. 670  
b Corn-sheller, root-cutter, etc. 674
- 320 Brewster, Dodge, & Huse, Peru, Ill.**—Wheel corn-cultivator, steel plows for old ground and for breaking prairie-sod. Q 26. 670
- 321 Greenwich Machine Works, Greenwich, N. Y.**—Cultivator and shovel plow. M 26. 670
- 322 Richmond Plow Works, Richmond, Ind.**—Steel plows. L 25. 670
- 323 Moline Plow Co., Moline, Ill.**—Wood-beam plows, steel-beam plows, and cultivators. Q 26-28. 670
- 324 Laurence & Chapin, Kalamazoo, Mich.**—Plows. M 24. 670
- 325 Muschert, B. F., Morrisville, Pa.**—Cultivator plow. M 23. 670
- 325a Strombeck, Charles W., Syracuse, N. Y.**—Harrow. L 27. 670
- 325b Bidwell, J. C., Pittsburg, Pa.**—Plows, and steel castings. S 28. 670
- 325c Ellis, Minot, Greenfield, Mass.**—Swivel plows. L 24. 670
- 325d Feenders, Harm., Charles City, Iowa.**—Clod-crusher. Q 12. 670
- 325e Causland, McCoy, & Causland, Philadelphia, Pa.**—Pick-axe. M 26. 670
- 325f Lamborn, Lewis, Hamorton, Pa.**—Cultivator with attachment for eradicating potato bugs. N 28. 670
- 325g Cagwin & Young, Joliet, Ill.**—Spading-plow. M 23. 670
- 325h Auburn M'fg Co., Auburn, N. Y.**—Agricultural hand implements. Intersection of aisle N and main transept. 670
- 326 Rogers, C. B., Philadelphia, Pa.**—Cultivators, berry and fruit baskets. M 26. 670
- 326a Kroh, C. & P. G., Kroghville, Wis.**—Cultivator. M 24. 670
- 326b Deats, L. M., & Co., Pittstown, N. J.** N 23.  
a Plows. 670  
b Power corn-shellers. 674
- 327 Benson, B. S., Baltimore, Md.**—Steam plow. N 9. 670
- 328 Speer, Alexander, & Sons, Pittsburg, Pa.**—Iron and steel plows. M and L 28. 670
- 329 South Bend Iron Works, South Bend, Ind.**—Chilled plows and attachments, specimens of chilled metal. P 26. 670
- 330 Hull, David H., Syracuse, N. Y.**—Machine for stripping and booking tobacco. M 22. 670
- 331 Brous, T. Miles, Philadelphia, Pa.**—Plows. M 24. 670

## Machines, Implements, and Processes of Manufacture.

- 332** Buford, B. D., & Co., Rock Island, Ill.—Plows and cultivators. O 28. 670
- 333** Wyckoff & McDonald, Hightstown, N. J.—Two-horse gang-plow. M 16. 670
- 334** Binder & Schweibing, Mauch Chunk, Pa.—Adjustable corn-plow. L 23. 670
- 335** Estes, William A., Boston, Mass.—Anti-friction plow. N 26. 670
- 336** Travis, A. B., Brandon, Mich. L 22. 670  
a Horse wheat-hoe. 670  
b Seed-drill. 671
- 337** Root, D., Son & Co., Mount Joy, Pa.—Steel and iron plows, cultivators, and agricultural steels. L 28. 670
- 338** Reynolds, E. D. & O. B., Brockton, Mass. N 25.  
a Gang plows and attachments, cultivators, harrows, and horse-hoes. 670  
b Seed-drills, planters, etc. 671
- 339** Allen, R. H., & Co., New York, N. Y. Q and R 25.  
a Plows, cultivators, harrows, and horse-hoes. 670  
b Seed-sowers. 671  
c Corn-sheller and separator. 673  
d Horizontal and vertical burr-stones, brick-machines, seed-hullers. 674
- 340** Chicago Plow Co., Chicago, Ill.—Plows and cultivators. P 28. 670
- 342** Avery, B. F., & Sons, Louisville, Ky.—Plows, cultivators, etc. N 28. 670
- 343** Walker, James R., Detroit, Mich.—Iron plow. K 28. 670
- 344** Harnish, Edward P., Felton, Del. L 22.  
a Cultivator. 670  
b Corn-planter. 671
- 345** Gregg & Co., Trumansburg, N. Y. R 20.  
a Sulky-plow. 670  
b Mowing-machine. 672
- 346** Hutchinson, Samuel, Griggsville, Ill.—Adjustable harrow. P 28. 670
- 348** Gifford, Johnson, & Co., Hudson, N. Y.—Pulverizing-cultivators, corn-cultivators, and hilling-plows. O 26. 670
- 349** Carr & Hobson, New York, N. Y.—N, O, and P 28.  
a Plows and other agricultural implements. 670  
b Hay-cutters, corn-shellers, mills, presses, etc. 674  
c Churns. 675
- 350** Ames, Oliver, & Sons, North Easton, Mass.—Shovels, spades, scoops, and drainage tools. S 26. 670
- 351** Griffiths, George, Philadelphia, Pa.—Shovels, spades, handles, coal-hods, and pans. These goods are as produced at factory. We exhibit a spade used by Washington's army at Valley Forge. It was dug up by the late Rev. Dr. Brainerd. The handle replaced by one of style used at that date. T 27. 670
- 351<sup>a</sup>** Fisher, Samuel, Philadelphia, Pa.—Gang-plow and cultivator-comb. O 26. 670
- 351<sup>b</sup>** Orchard City Agricultural Works, Burlington, Iowa. P 28.  
a Plows. 670  
b Rakes. 672
- 351<sup>c</sup>** Wayne Agricultural Company, Richmond, Ind. S 25.  
a Cultivators. 670  
b Drills. 671  
c Mowers and reapers. 671
- 351<sup>d</sup>** Bowers & Stitzer, Hackettstown, N. J. L 11.  
a Beam-plow. 670  
b Churn worked by a dog. 675
- 352** Bergtresser, E. L., Hublersburg, Pa.—Corn-planter. K 18. 671
- 353** Rowland, T., & Sons, Philadelphia, Pa.—Shovels and spades. T 17. 670
- 354** Walton, Silas, Moorestown, N. J.—Garden and field cultivator. L 25. 670
- 355** Rue, J. Chalmers, Englishtown, N. J.—Gang-plow. L 25. 670
- 356** Smith, Peter E., Scotland Neck, N. C. M 24.  
a Sulky-plow. 670  
b Cotton-seed planter. 671
- 357** Bayliss, Edwin, Massillon, Ohio. O 17-18.  
a Wheel-harrow, iron cultivator, and shovel-plow. 670  
b Harvester. 672
- 358** Ward's Fertilizer Co., Boston, Mass. M 26.  
a Harrows. 670  
b Potato-planter and digger. 671
- 359** Brown, Hinman & Co., Columbus, Ohio. T 25.  
a Weeding-hoes, garden-rakes, manure and spading forks. 670  
b Scythe-snaths, grain-cradles, hay-forks, etc. 672
- 360** Mabbett, Truman, Vineland, N. J. O 26.  
a Hand and horse cultivators. 670  
b Berry-crates. 671
- 361** Withington, Cooley, & Co., Jackson, Mich. T 25.  
a Cast-steel hoes, rakes, and potato-hooks. 670  
b Hay and manure forks, scythe-snaths, etc. 671
- 362** Morrison & Fay, Bryan, Ohio. M 25.  
a Plow. 670  
b Corn-sheller. 674
- 364** Brownback, P. N., Limerick Station, Pa. N 16.  
a Threshing-machine, dust-conveyer, and plows. 670  
b Self-acting hay-rake, mower, and reaper. 671  
c Sausage-cutter, stuffer, etc. 674
- 366** Higginum Manufacturing Co., Higganum, Conn. L 25.  
a Plows and agricultural implements. 670  
b Corn-shellers, hay-spreaders, etc. 674  
c Cider-mills, meat-cutters, etc. 675
- 367** Remington, E., & Sons, Ilion, N. Y. O 19.  
a Plows, cultivators, hoes, shovels. 670  
b Mower, horse and hand rakes. 672  
c Cotton-gin. 673  
d Milk-cooler. 675
- 368** Pennsylvania Agricultural Works, York, Pa. O and P 24.  
a Plows, cultivators, and tools for cultivation. 670  
b Seed-planter. 674  
c Threshing-machines, horse-powers. 673  
d Cotton-gins, steam-engines, and agricultural steels. 674

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 12.

## Machines, Implements, and Processes of Manufacture.

**369 New York Plow Co., New York, N. Y. N 21.**

- a Plows, harrows, rollers, clod-crushers, etc. 670
- b Hay-rakes. 672
- c Corn-shellers. 673
- d Cider and wine mills. 674

**370 Hillborn, Buckman, & Co., Newtown, Pa. Q 16.**

- a Plows. 670
- b Mower, horse-rake, etc. 672
- c Corn-sheller. 673
- d Fodder-cutter. 674

**371 Wheeler & Melick Co., Albany, N. Y. Q 7.**

- a Ithaca or American wheel horse-rake. 670
- b Centennial self-acting wheel horse-rake. 672
- c Saratoga or New York wheel horse-rake. 672
- d Clover-huiler, thresher and cleaner, thresher and shaker, straw-preserving thresher, one and two horse and lever powers. 673
- e Feed-mill, cutter, wood-sawing machine, horse pitchforks, etc. 674
- f Dog, calf, or donkey power, for churning, etc. 675

**372 Allen, S. L., & Co., No. 119 South Fourth st., Philadelphia, Pa.—Farm and garden tools. Manufacturers of the Planet, Jr., hand seed-drills and wheel-hoes. Also of improved horse-hoes and cultivators, insect fumigators, etc. M 20. 671****373 Farmers' Friend Manufacturing Co., Dayton, Ohio.—Grain-drill and grass-seed sower, grain-drill and broad-cast seed sower combined, grain-drill and fertilizer combined. N 17. 671****374 Mast, P. P., & Co., Springfield, Ohio.—Grain-drills and seed-sowers, broadcast seeder and cultivator, riding or walking cultivator, and plow-sulky. M 17. 671**

**375 McSherry, D. E., & Co., Dayton, Ohio.—Grain and seed drills.** We claim a positive force-feed, constructed in such a manner as not to allow any grain to pass that is not carried out by the spiral wheel working inside of a cap or case underneath the hopper; provided with a patent washer, which prevents the grain from being broken, and causing a regular flow of seed. It is regulated by the change of cog-wheels, which is simple, durable, and making positive quantities. The quantities per acre are not raised by the roughness of the ground or the box being full or nearly empty. It has also been used successfully in drilling corn, beans, peas, etc. It is provided with a grass-seed box, which can be used either in front or rear of machine. An iron lift-bar is attached, which is strong, neat, and durable, by means of which the hoes are raised out of the ground, and at the same time throwing the whole machine out of gear. To the drill is attached a long hoe, iron drag-bars which can be changed from single to double rake, or vice versa; added to this is an iron shaft-bar, which is held permanent by bolts, therefore not detracting from the strength of the frame. There is a light, strong frame, constructed with six pieces of timber and an iron axle running the whole width of it. It has a surveyor-chart, that measures the ground actually sown. It

has high wheels, broad tread. We also have a spring hoe, known as the Willoughby patent. Weight of drill about 525 pounds.

The Rice drill has a positive force-feed, constructed with a spiral wheel, provided with two washers or disks, one at each end of feed-wheel, working inside of cap or case underneath the hopper, causing a regular flow of seed. The quantity is regulated by change of cog-wheels, making positive quantities. The frame is constructed of six pieces of timber, making it strong and durable. It is provided with a pair of shafts for one horse only. Has an iron axle running whole width of frame. It has high wheels, broad tread, and weighs about 400 pounds.

Broad-cast seeders. This is a positive force-feed, constructed with a spiral wheel and flange, working inside cap, thereby causing a regular flow of seed, and only allows such grain to pass out as is carried by the wheel. The washers at the side of the wheel protect the grain from being broken or injured. The quantity is regulated by changing cog-wheels, making a positive quantity sown. The roughness of the ground or the box being full or nearly empty has no effect on the discharge of seed. It has six iron spouts for the grain to pass through and scatter in front of the hoes. Has twelve hoes, six inches apart. The points are steel and are reversible; can be regulated to the depth desired. Has iron drag-bars, to which the hoes are attached. These being all under the main frame, with a lift-bar attached to raise them out of the ground. It has a grass and flax seed attachment, and has an iron axle running the whole width of the frame. Has high wheels, broad tread, and weighs about 450 pounds. M 18. 671

**376 Campbell, J. & J. A., Harrison, Ohio.—Drill. M 23. 671****377 Buist, David, Philadelphia, Pa.—Seed-sower. K 19. 671****380 Clarridge, John, Mt. Sterling, Ohio.—Corn and cotton-seed planter. M 17. 671****381 S. J. Waite Manufacturing Co., Worcester, Mass. N 22.**

- a Breast-drill, corner-brace, saw-sett, and lathe. 671
- b Apple-parer. 674

**382 Nash & Brother, New York, N. Y.—Potato-planter. N 19. 671****383 Selby, James, & Co., Peoria, Ill.—Corn-planter. M 22. 671****383a Beatty, Matthew O., Concord, N. C.—Cotton-planter, guano-distributor, and cultivator combined. M 23. 671****384 Bickford & Huffman, Macedon, N. Y.—Grain-drill and attachments. L 18. 671**

Last fall Bickford & Huffman were invited by chief of Centennial bureau to perform seeding of grain for the field trial to take place this year at Philadelphia. Seeding accomplished with following results: Actual measurement of ground 45 $\frac{1}{2}$  acres. Field to be sown with wheat 5 pecks to the acre. Quantity required 56 bushels 5 $\frac{1}{4}$  pounds; quantity sown, 57 bushels 27 $\frac{1}{4}$  pounds—an excess of only 33 pounds upon entire field of 45 $\frac{1}{2}$  acres, or less than  $\frac{3}{4}$  pound excess per acre. To account for which, if it need

## Machines, Implements, and Processes of Manufacture.

- be accounted for, three headlands, upon which were lapped three tubes, were sown. This result was considered very satisfactory, and demonstrates the accuracy of the quantity-wheel. The fertilizer attachment, which has been transferred to the rear, is an improvement, and makes the distribution even and uniform. The machine is nicely balanced, and the weight removed from the horse's neck.
- 385** Hall, H. L., Chicago, Ill.—Combined seed-sower and cultivator. L 19. 671
- 386** Vandiver Corn-Planter Co., Quincy, Ill.—Corn-planter. M 19. 671
- 387** Stokes, F. N., Urbana, Ohio.—Planter, fertilizer, and pulverizer. K 18 and 19. 671
- 387a** Cooper, Mark, Union, S. C.—Combined fertilizer, refiner, and seed-planter. M 22. 671
- 387b** Brown, H. L. & C. P., Shortsville, N. Y.—Grain-drill, with and without attachments. M 21. 671
- 388** Hoosier Drill Co., Milton, Ind.—Wheat-drill with grass-seed attachment, corn-drill. K 15. 671
- 388a** Screw Mower and Reaper Co., Philipsburg, N. J.—R, S, and T 15.  
a Grain drills. 671  
b Mowing and reaping machines. 672  
c Hay and stalk cutters. 674
- 390** Johnson & Gere, Owego, N. Y.—Grain-drill and attachments, fertilizer-sower. L 19. 671
- 390a** Gibbs & Lee, Brooklyn, N. Y.—Steam spader. M 24. 671
- 390b** Rothchild, Joseph, Shelbyville, Ky.—Corn-planter. K 18. 671
- 391** Eagle Manufacturing Co., Davenport, Iowa. M 26.  
a Walking cultivator. 671  
b Sulky rake. 672
- 392** Asay & Wood, Philadelphia, Pa.—Combined corn-planter, fertilizer-distributor, and deflecting cultivator. N 22. 671
- 392a** Bliss, B. K., & Sons, seedsmen, 34 Barclay St., New York, N. Y. Randolph's hand seed-sower, for sowing all kinds of garden-seeds with accuracy and despatch, can be easily operated by a lady or child. Highly recommended by experienced gardeners and farmers. Its cost is trifling, compared with the advantages resulting from its use. The saving in time and seeds will undoubtedly repay the outlay in the planting of a single week. \$1.25 each. Sent by mail, postpaid, to any address in the U. S. upon receipt of \$1.50. Randolph's fertilizer distributor, for distributing all kinds of concentrated fertilizers, as phosphates, guano, ashes, plaster, or chemical manures, without touching the material with the hands, a matter of some importance when caustic substances are used. One man can do the work of three by the ordinary method. Price, \$5. B 28. 671
- 393** Crowell, J. B., & Co., Green Castle, Pa.—Grain, guano, and grass-seed drills. L 12. 671
- 394** Willoughby, James D., Philadelphia, Pa.—Grain-drill, with and without fertilizer attachment. L 22. 671
- 395** Sweeney, Hugh M., Worcester, Mass.—Liquid fertilizing machine. I 21. 671
- 396** Springfield Manufacturing Co., Springfield, Ill.—Climax corn-planter. L 19.  
An excellent two-horse check row corn-planter; six chamber rotary drop; universal wrought-iron coupling; broad steel runners; woven wire open heel; simple in construction; certain in operation. Send for illustrated circular. 671
- 398** Rentchler, D. & H., Belleville, Ill.—Grain and seed drills. M 19. 671
- 399** Heamer, Andrew J., Pittsfield, Ill.—Hedge-trimmer. M 14. 671
- 400** Seymour, John B., Philadelphia, Pa.—Box-hoe seed-planter. T 8. 671
- 401** Rutchman Bros., Philadelphia, Pa. S 24.  
a Self-feeding hand-drill. 671  
b Meat-chopper. 674
- 402** Keystone Manufacturing Co., Sterling, Ill. L 19.  
a Corn-planter. 671  
b Corn-sheller, cider mill and press. 673
- 403** Esterly, George, & Son, White-water, Wis. P 20 and 21.  
a Cultivator and seeder combined. 671  
b Harvester, self-raking reaper. 672
- 404** Brown, George W., Galesburg, Ill. —N 15.  
a Corn-planter. 671  
b Field corn-stalk cutter. 672
- 405** Goodell Co., Antrim, N. H. T 14.  
a Broadcast seed-sower. 671  
b Apple-parers, peach-parers, cherry-stoners, etc. 674
- 408** Hagerstown Agricultural Implement Manufacturing Co., Hagerstown, Md. R and S 26.  
a Grain, seed, and fertilizing drills. 671  
b Clover huller and cleaner. 673  
c Feed-cutter. 674
- 407** Williams Bros., Ithaca, N. Y. P 12.  
a Fertilizer and grain-sower. 671  
b Horse hay-rake. 672  
c Portable engine. 671
- 408** Adriance, Platt, & Co., New York, N. Y.—Self-raking reapers and mowers. T 15. 67
- 408a** Rank, Amos, & Co., Canton, Ohio.—Mowers, reapers, etc. K 13. 67
- 408b** Perry, John G., Kingston, R. I.—Mowers. P 22. 67
- 408c** Johnston, Samuel, Brockport, N. Y.—Automatic harvesters and binders. T 13-14. 671
- 409** Eagle Mowing & Reaping Machine Co., Albany, N. Y.—Mowing and reaping machines. T 18. 672
- 410** Osborne, D. M., & Co., Auburn, N. Y.—Mowing and reaping machines. O 13 and 14. 672
- 411** Wood, Walter A., Hoosac Falls, N. Y. S and T 13-14.  
a Droppers. 671  
b Mowers, reapers, harvesters, etc. 672
- 412** Warder, Mitchell, & Co., Springfield, Ohio.—Reapers and mowers. P 15. 672
- 413** Thomas, John H., & Sons, Springfield, Ohio.—Sulky-spring tooth hay-rake. L 15. 672



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- 413a Kelly, William E., New Brunswick, N. J.—Reciprocating screw mowing-machine. R 17. 672
- 413b Chaplin, C. H., Tecumseh, Mich.—Rake. L 14. 672
- 413c Schenck, P. C., Jr., Neshanic, N. J.—Mower and reaper. K 15. 672
- 413d Wells, French, & Co., Chicago, Ill.—Potato-digger. R 24. 672
- 413e Whiton, David E., West Stafford, Conn.—Mowing-machine. R 14. 672
- 413f Mills, Peck, & Co., Otsego, Mich.—Field and garden hoes. R 28. 672
- 414 Whiteley, Fassler, & Kelly, Springfield, Ohio.—Reapers and mowers. O 15 and 16. 726
- 415 Prout, H. N., Westfield, Mass.—Adjustable hoeing-machine. Q 28. 672
- 416 Ohmer, Augustus J., Hamilton, Ohio.—Hand mowing-machines. M 13. 672
- 417 Dodds, John, Dayton, Ohio.—Sulky horse hay-rakes. M 15. 672
- 418 Barnes, George, & Co., Syracuse, N. Y.—Mower-knives, reaper-sickles, spring keys, and cutters. M 15. 672
- 419 Taylor, B. C., Dayton, Ohio.—Wheel horse hay and grain rake. L 14. 672
- 420 Coates, A. W., Alliance, Ohio.—Lock-lever horse hay-rake. L 15. 672
- 421 Whittemore Bros., Boston, Mass.—Hay-rake and feed-cutter. L 20. 672
- 422 Chadborn & Coldwell, Newburgh, N. Y.—Lawn-mower; smoked-beef cutter. N 13. 672
- 423 Wiener, J. E., Friendship, N. Y.—Self-discharging rake. M 14. 672
- 424 Converse, Bolivar C., Springfield, Ohio.—Reaping-machine. R 16. 672
- 425 Eagle Company, Riverton, Conn.—Grain, grass, and bush scythes, grass-hooks, corn and hay knives. T 25. 672
- 426 Huber Manufacturing Co., Marion, Ohio.—Revolving hay-rake. L 16. 672
- 427 Dutton, R., Yonkers, N. Y.—Reaping and mowing machine. R 25. 672
- 428 Rochester Agricultural Works, Rochester, N. Y.—Reapers and mowers. T 14. 672
- 429 Seiberling, J. F., Akron, Ohio.—Mower and attachments. Q 14. 672
- 430 Whitman & Miles Manufacturing Co., Akron, Ohio.—Mowing and reaping machine knives, sickles, and sections. T 18. 672
- 431 Aultman, Miller, & Co., Akron, Ohio.—Mower with table-rake reaper. Q 15. 672
- 431a Royce, John S., Cuylerville, N. Y.—Reapers. Q 25. 672
- 431b Gordon, James F., Rochester, N. Y.—Self-binding harvester. P 17. 672
- 432 Spink, James L., & Co., Minneapolis, Minn.—Mowers and reapers. Q 14. 672
- 433 Bellaire Manufacturing Co., Bellaire, Ohio.—Mower and reaper. P 14. 672
- 434 Russell, C., & Co., Canton, Ohio.—Self-raker, reaper, and mower combined, single mower. R 14. 672
- 435 Tachop, Albert, Harrisburg, Pa.—Self-dumping wheel hay-rake. L 15. 672
- 436 Hewit, John C., Penns Grove, N. J.—Potato-digger. M 16. 672
- 437 New London Scythe Co., New London, N. H.—Scythes. Q 28. 672
- 437a Haynes, W. H., North Sudbury, Mass.—Hay-elevator. M 21. 672
- 438 Graham, Emlen, & Passmore, Philadelphia, Pa.—Lawn-mower. L 13 and 14. 672
- 439 Nellis, A. J., Pittsburg, Pa.—Harpoon horse hay-fork. Nellis O. H. H. H. fork and patent method for mowing and stacking hay or straw. Will save the farmer its cost every season. Also manufacturers of agricultural steels, and Nellis' patent cotton-tie steel-tempered by Nellis' process to suit all kinds of soil. Samples free. Address A. J. Nellis & Co., Pittsburg, Pa. S 17. 672
- 440 Field & Carpenter, Port Chester, N. Y.—Self-discharging hay-rake. L 15. 672
- 440a Ball, Samuel, Cogan's Station, Pa.—Grain-cradle. L 22. 672
- 440b Strait, H., Troy, N. Y.—Potato-digger. O 26. 672
- 440c Long, Allstatter, & Co., Hamilton, Ohio. L 14. 672
- a Rake, knives, sickles, mower, etc. 672
- b Fodder-cutter. 674
- 441 Clegg, Wood, & Co., Dayton, Ohio.—Self-discharging hay-rake. L 15. 672
- 442 Hills' Archimedean Lawn-Mower Co., Hartford, Conn.—Lawn-mowers. N 13. 672
- 443 Norton, James, Hightstown, N. J.—Potato-digger, and Rigg's patent gang-plow, for cultivating corn, cotton, potatoes, etc., manufactured by Wyckoff & McDonald, Hightstown, N. J. M 16. 672
- 444 Fisher, Henry, Canton, Ohio, U. S. A.—Patent prairie-mower knife-grinders, for sharpening harvester-knives; patent farm and plantation bells; patent ladies, hay-knives, harvester-knives, sections, etc. Illustrated descriptive circulars sent free upon application. T 24. 672
- 445 Gibbs & Sterrett Manufacturing Co., Corry, Pa.—Mower and attachments hay-conveyer. Q 17 and 18. 672
- 446 The Johnston Harvester Co., Brockport, N. Y.—Self-raking reaper, harvester, mower, and automatic grain-binder. O 20 and 21. 672
- 447 Pennock Manufacturing Co., Kennett Square, Pa.—Corn-sheller and hay-fork. Q 12. 672
- 448 Wright, James W., Minneapolis, Minn.—Grain-harvester and binder. N 22. 672
- 449 Superior Mower & Reaper Works, A. J. Sweeney & Son, Proprietors, Wheeling, W. Va.—Mowing-machine without cog-wheels or shafts; a worm-wheel on the axle drives a double-threaded steel screw, which directly operates the knife. P 16. 672
- 450 Bradley Manufacturing Co., Syracuse, N. Y.—Self-dumping hay-rake, mower, and self-raking harvester. Q 14. 672

## Machines, Implements, and Processes of Manufacture.

- 451 Norwalk Lawn-Mower Co., Norwalk, Conn.—Lawn-mowers. M 14. 672
- 452 Chapman Binder Co., Rochester, Minn.—Reaper and binder. T 17. 672
- 453 Towanda Eureka Mower Co., Towanda, Pa.—Mower and reaper. Q 19. 672
- 454 Bartram Sewing-Machine Co., Danbury, Conn.—Revolving cutter lawn-mowers. M 14. 672
- 455 Perry, Stuart, Newport, N. Y.—Hay-tedder. M 15. 672
- 457 Hand, S. A., Philadelphia, Pa.—Lawn-mower. M 13. 672
- 458 Mayo, M. C., Boston, Mass.—Mowing-machine. T 19. 672
- 459 Nye, S. R., Winchendon, Mass.—Horse-rake. The peculiarities of the S. R. Nye and Improved Bay State Rake are: 1st. The peculiar shape of the teeth, those at each end being brought forward of those in the centre, which prevents the hay from scattering or roping out. This is particularly advantageous when working on a side, hill, or gleaning. 2d. Also the manner of holding each tooth in its proper position laterally by what is called the guide, which prevents them from flopping about. 3d. Each tooth is independent of all others, thereby enabling it to pass over an obstruction twenty inches high without in the least affecting the teeth next by the side of it. 4th. The dumping arrangement, whereby any boy or girl who can drive a horse can rake as well as a man, as it is dumped entirely by the power of the horse. 5th. This rake has been submitted to some of the best mechanical talent in the country, who have pronounced it, with these improvements, to be simple and durable, having the unqualified approbation of farmers everywhere. 4000 of these rakes will be manufactured for the harvest of 1876. L 15. 672
- 460 Treman, Valentine, & Green, Ithaca, N. Y.—Corn sheller and hoe. L 27. 672
- 461 Maule, James S., Lewisburg, Pa.—Mower and automatic reaper. S 17. 672
- 462 Ithaca Agricultural Works, Ithaca, N. Y.—Wheel-rake and attachments. N 15. 672
- 463 Holt, Hiram, & Co., East Wilton, Me.—Grass and bush scythes, hay-knives, etc. T 25. 672
- 464 Read, C. A., Bridgeport, Conn.—Lawn-mower. M 14. 672
- 465 Morgan, D. S., & Co., Brookport, N. Y.—Reaping and mowing machines. P 18. 672
- 466 Goodwin, William F., Stelton, N. J.—Mowing and reaping machine. Q 13. 672
- 467 Kenyon Brothers, Carbondale, Pa.—Potato-digger. M 15. 672
- 468 Mann, H. F., Pittsburg, Pa.—Harvesting and mowing machine. S and T 19. 672
- 469 Gammon & Deering, Chicago, Ill.—Harvester, automatic binder, wind-mill. No class of farm machinery has undergone so many valuable changes by way of improvements during the past forty-

three years as the reapers, mowers, and harvesters. This reaper is protected by the patent secured by C. W. & W. W. Marsh in 1858, which saves the labor and annoyance of three men in binding the grain as it comes from the machine. In the Western and Middle States, where the grain is grown most extensively, the Marsh harvester is sold in great numbers. The Marsh harvester, which is popularly known in the West as the King of the Harvest Field, combines the essential features of simplicity, utility, durability, and lightness of draft. As it is the original of the harvester class, which has so completely revolutionized the trade in nearly all classes of these machines, it is but fair to say that the proprietors, who have made this machine such a wonderful success, have spared neither pains nor money in adding from year to year the many improvements so well known in its mechanism and general appearance. The Marsh harvester is a light machine, only weighing 800 pounds. It is made of the best material, all the timber used being seasoned at least three years, every part liable to breakage being especially well and carefully made. It cuts the grain clean, with little waste, takes up, down, and crinkled grain, and draws easily with two horses. The farmer who purchases a Marsh harvester is sure to get a thoroughly tried and popular machine. The Plano Gordon self-binding harvester and automatic wire-binder, which the inventors have been for several years in perfecting, is acknowledged by experienced mechanics a good and highly valuable addition. While the inventors do not claim for the automatic binder perfection, they do claim that the present one works very satisfactorily. A large number are in use in the West and Southwest; and from the numerous testimonials from farmers and local committees appointed to test their merits, there can be no question that the binder is very valuable and fast becoming in general use. The harvester, together with the automatic binder, is in all respects first class, as it works almost to perfection, binds the bundles tight, and does not leave the straw unbound upon the field. It reduces the labor of harvesting to the very minimum, shortens the time in completing the work, is in no way complicated, is not likely to get out of order, and one trial commends it to those desiring to purchase a first-class machine. It is labor-saving, manifestly popular, does clean, economical work, has been fully tested, embodies the improvements of many years, and its work will pay for it in a short time, reducing as it does the cost of harvesting to the farmer. O 20 and 21. 672

- 470 Handy Horse Hay-Fork Co., Conneautville, Pa.—Hand horse hay-fork. L 22. 672

- 471 Otis Brothers & Co., New York, N. Y.—Mowing-machine.

The hay-maker is noiseless, light-draft, very strong, and of great cutting power. The knife is actuated by a new mechanical movement consisting of but two pieces. S 22. 672

- 472 Harrison Manufacturing Co., Lansing, Mich.—Rubber-lined knife-head for reapers and mowers. T 17. 672

## Machines, Implements, and Processes of Manufacture.

- 473 Champion Machine Co., Springfield, Ohio.—Reapers, mowers, rakers, and droppers. Q 15. 672
- 474 Hanes, John, Moorestown, N. J.—Corn-sheller. T 23. 672
- 475 Lewis, James H., Detroit, Mich.—Potato-digger. N 15. 672
- 476 Richardson Manufacturing Co., Worcester, Mass.—Combined mower and reaper, hay-tedder, etc. M 14. 672
- 478 Collyer, Robert H., Chicago, Ill.—Flax machinery. S 10. 672
- 479 Lee, James, Jr., Stonersville, Berks Co., Pa.—Hay-tedder with cr without rake. Merit: superior manner in which it turns the hay. L 15. 672
- 480 Westfall, D. B., Lyons, N. Y.—Potato-digger. L 16. 672
- 481 Gulick, Edwin, New Brunswick, N. J.—Safety-seat for harvesters and mowers. T 8. 672
- 483 Vermont Farm Machine Co., Bellows Falls, Vt.—Gleaner, horse, hay, and grain rake. K 15. 672
- 484 Dunn Edge Tool Co., West Waterville, Me.—Scythes, axes, grass-hooks, hay, straw, and corn knives. R 24. 672
- 485 Riggs, M. B., Palmyra, N. Y.—Potato-digger. L 26. 672
- 486 Stevens, Ansel, Gorham, Maine.—Mower. T 21. 672
- 487 McMentry, John, Lexington, Ky.—Reaper and mower. P 17. 672
- 488 McPherson, D., Caledonia, N. Y.—Automatic grain-binder. R 17. 672
- 489 Patrons' Manufacturing Association, Indianapolis, Ind.—Direct draft mower. L 25. 672
- 490 Aultman, C., & Co., Canton, Ohio. Q and R 22. 672  
 a "New" Buckeye mower. 672  
 b Improved Buckeye mower. 672  
 c Improved Buckeye mower and dropper. 672  
 d Improved Buckeye mower and table-rake reaper. 673
- 491 Stratton & Cullum, Meadville, Pa.—Hay-loading machines. S 25. 673
- 492 Sandwich Manufacturing Co., Sandwich, Ill.  
 a Harvester. 672  
 b Self-feeding corn-sheller. 674  
 The Adams and French harvester differs from other riding and binding machines in not using canvas or belts, and cuts and elevates grain, wet, green, or dry. There are many good reasons why this harvester is considered by experienced mechanics and farmers to possess many excellences, which have been recently added in the various improvements, some of them being entirely new, giving it very decided advantages. First, it uses no canvas or belts; the vibrating rakes carry the grain uniformly, evenly, and with great accuracy. Second, the raking apparatus is peculiarly constructed, so that it cannot be affected by weeds or dampness; and this feature the farmer will recognize. Third, it has capacity for three binders when time presses; this capacity is of very great importance, as time is money, especially in the Western States, where this machine is mostly sold.

It is manufactured in Sandwich, Ill., and principally sold in Kansas, Nebraska, Illinois, Missouri, Iowa, and Oregon. The Adams patent self-feeding power corn-sheller, known as picker-wheel machine, is a strictly automatic corn-shelling machine. The corn is shelled from the cob in much the same way it would be done by hand, and without subjecting the ears to undue pressure, in consequence of which the cobs are not broken and mixed with the grain and the kernels are not cracked and ground. The annual product of corn is immense; and to properly and expeditiously prepare it for our market is a herculean task, but, aided by these thorough and cleaning shellers, the corn is rapidly made ready, and is in the best possible condition, the quality of the work being above just criticism. To this is added the adaptability of the machines to all qualities of corn, frosted, sound, or soft, and performing a great amount of work in a given time, with a given power, leaving the cob whole, suitable for fuel when needed, and the corn perfectly clean. The self-feeding is a saving of much labor and considerable expense, and commends the machine wherever introduced. The farmers' sheller is a compact little machine, but cannot take the place of the self-feeders, being designed for individual use, avoiding the delays of making use of self-feeders, often owned by a number, who are compelled to wait one on another. S and T 20-21.

- 493 Rue, George W., Hamilton, Ohio. N 15. 670  
 a Garden-cultivator. 670  
 b Potato-digger. 672
- 494 Pritz, A., & Sons, Dayton, Ohio. S 16. 670  
 a Grain-drill. 670  
 b Field-roller. 671  
 c Self-raking reaper and mower. 672  
 The Centennial Dorsey self-raking reaper and mower, combined with controllable rake. A. Pritz & Sons, manufacturers, have added to this reaper a perfect controllable self-rake, and one that can be operated by the driver to rake off at will, or the sheaf can be held as long as desired.  
 The "Centennial Dorsey" will be made with five rakes, either of which can be made to rake the sheaf or act as a reel, as the driver may see fit. The reaper, when left alone, will make one sheaf every revolution of the rakes, but the driver can instantly and very easily make any rake make a sheaf. In heavy grain a sheaf can be made of any size, from one to five sheaves in every sixteen feet of ground gone over, and in light grain the rakes can be held until the proper amount of grain may be on the platform. The Centennial Dorsey rake being under the control of the driver, any size sheaf can be made. This reaper is strong and durable; has no side draught; has the weight on the rakes and drive-wheel; is easily managed, being entirely automatic and under the control of the driver.
- 495 Harbert & Raymond, Philadelphia, Pa. P 10. 672  
 a Mower and hay-rakes. 672  
 b Threshing-machine and clover-mill. 673  
 c Portable steam-engine, portable saw-mill, and hay-cutters. 674

## Machines, Implements, and Processes of Manufacture.

- 496 Burt, Hildreth, & Co., Harvard, Mass. N 14.  
 a Burt's Union horse-power. The pivots and axles are all hardened and durable. Large truck wheels, and runs easy and at low elevation. 673  
 b Lawn mower, recent invention. 673  
 c Rocking saw-table, pendulum-balanced, rapid and safe, for sawing cord-wood. Wood-splitter, cheap, simple, and efficient. 674
- 497 Cohu, A. B., New York, N. Y. P 28.  
 a Rake. 673  
 b Corn-sheller, stalk-cutter, hand-saw-mill. 674  
 c Churn. 675
- 498 Richardson, William H., Philadelphia, Pa.—Corn-husking machine, machine for cutting standing corn and husking. T 22. 673
- 499 Pitte, H. A., Sons, Manufacturing Co., Chicago, Ill.—Thresher, separator, and cleaner, horse-power. S 19. 673
- 500 New Era Manufacturing Co., Elmhurst, Ill.—Grain-grader, grain-separator, smut ball extractor, scourer, and wheat-brush machine. R 23. 673
- 500a Hall's Self-Feeding Cotton-Gin Co., Sing Sing, N. Y.—Self-feeding cotton-gin and condenser. K 11. 673
- 500b Keller, Henry, Sank Centre, Minn.—Farm mills. T 25. 673
- 500c Kibler, N., Pittsfield, Ill.—Farm mills. M 25. 673
- 500d Freeman & Clark, Racine, Wis.—Farm mill; grain and seed separator. F 28. 673
- 500e Birdsell Manufacturing Co., South Bend, Ind.—Thresher, cleaner, huller, etc. L 18. 673
- 500f Ellis, Hoffman, & Co., Pottstown, Pa.—Endless chain horse-power thresher and cleaner. L 11-12. 673
- 500g Lidy, Geo. F., & Co., Waynesboro', Pa.—Fanning-mill, grain and seed separator. T 26. 673
- 501 Albion Coffee-Huller Co., New York, N. Y.—Coffee hulling, polishing, and separating machine. O 22. 673
- 502 Brayley, James, Buffalo, N. Y.—Threshing-machine and double pinion horse-power. T 7 and 8. 673
- 503 Shreiner, J. H., Mechanicsburg, Pa. T 26.  
 a Grain-drill and shovels. 671  
 b Grain-fan and seed-separator. 673
- 504 Case, J. I., & Co., Racine, Wis.—Threshing-machine. T 9. 673
- 505 Tubbs, Hoyt, Osceola, Pa.—Grain separator and cleaner, separator and fanning-mill. S 8. 673
- 505a Pierpont, Wm., Salem, N. J.—Threshing-machine with grain and seed separator. S 7. 673
- 505b Stone, Sarah M., & Porter, Samuel G., Lancaster, Pa.—Grain-fan. T 27. 673
- 505c Hulshizer & Larzelere, Doylestown, Pa. P 9.  
 a Horse-power, thresher and cleaner, thresher and shaker, cutting boxes. 673  
 b Corn-shellers. 674
- 505d New York Manufacturing Co., New York, N. Y.—Wine press. P 17. 673
- 506 Heebner & Sons, Lansdale, Pa.—Horse-powers, threshers, separators, and cleaners. O 7. 673
- 507 Cartrite, Barnard, Norwalk, Ohio.—Fanning-mill, box of grain and fixtures. T 28. 673
- 508 Kenosha Fanning-Mill Co., Kenosha, Wis.—Fanning-mill. S 28. 673
- 509 Miller, A. S., Republic, Ohio.—Fruit-ladder. T 23. 673
- 510 Fay, C. J., Camden, N. J.—Portable hay and cotton press. R 11. 673
- 511 Spence, L., Martin's Ferry, Ohio.—Thresher and cleaner, double cleaner, horse-power, etc. O 8. 673
- 512 Brown Cotton Gin Co., New London, Conn.—Cotton-gin with feeder and condenser; presses. P 21 and Q 12. 673
- 513 Nichols, Shepard, & Co., Battle Creek, Mich.—Grain-thresher, separator, and cleaner. R 7 and 8. 673
- 514 Kenyon, Silas R., Newark, N. J.—Corn-husking machine. S 26. 673
- 514a Hafner, John A., Pittsburgh, Pa.—Threshing-machine gear and coil springs. K 12. 673
- 514b Cockle Separator Manufacturing Co., Milwaukee, Wis.—Separating machines. Q 11. 673
- 515 Hagerstown Steam Engine and Machine Co., Hagerstown, Md.—Grain threshing, separating, cleaning, and bagging machine. R 26. 673
- 516 Harder, Minard, Cobleskill, N. Y.—Railway horse-power, thresher and cleaner, model of railway horse-power. M and N 7. 673  
 The two Grand Gold Medals were awarded Harders' two-horse power, and thresher and cleaner, at the great National Implement Trial, Auburn, N. Y., for "slow and easy movement of the horses, fifteen rods less than one and one-half miles' travel per hour; thorough and conscientious workmanship and material in every place; nothing slighted; mechanical execution of the very best kind," as shown by official report of Judges, distributed at column M 7, Agricultural Hall, International Exhibition.
- 517 New Hampshire State Centennial Board. E 20-21.  
 a Agricultural implements. 673  
 b Freezers. 675
- 518 Read, Calvin D., & Ellis D., Ayer, Mass.—Corn-sheller. N 22. 673
- 518a Wakeman, R., Port Deposit, Md.—Hay or cotton press. M 10 and 11. 673
- 518b Scattergood, H. V., Philadelphia, Pa.—Cotton-gin and feeder. L 14. 673
- 518c Basset, Nathan, Philadelphia, Pa.—Sifting-machines. T 23. 673
- 518d Brown Cotton-Gin Co., New London, Conn.—Cotton-gins. Q 12. 673
- 518e New York Cotton-Gin Co., New York, N. Y.—Hand-gin. S 7. 673
- 518f Cardwell, J. W., & Co., Richmond, Va.—Rice-thresher. K 7. 673
- 518g Jones, John A., Mt. Pleasant, Del.—Potato-assorter. L 27. 673
- 519 Sheeler, Buckwater, & Co., Royers Ford, Pa.—Horse-power and threshing-machine. K 10-11. 673
- 520 Kahnweiler, David, New York, N. Y.—Cotton-seed huller. S 11. 673

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.

## Machines, Implements, and Processes of Manufacture.

- 531 Judkins, Mark D., Osakio, Minn.—Self-sacking grain-separator. T 8. 673
- 532 Shields & Bro., Philadelphia, Pa.—Corn-huskers. B 24. 673
- 533 Westinghouse, G., & Co., Schenectady, N. Y.—Grain-threshing machine. T 25. 673  
The exhibitor claims these advantages: a complete cylinder and concave, no loosening of teeth, unusual separating capacity, and perfect cleaning apparatus.
- 534 Pumphrey, W. F., Fairfield, Iowa.—Seed-mill and grain-separator. S 7. 673
- 535 Wood, O. K., & Co., West Chazy, N. Y.—Grain and seed separator and fanning-mill combined. T 28, *small*. 673
- 536 Silver & Deming Manufacturing Co., Salem, Ohio. Q 23. 673  
a Endless chain, two horse-power, for general purposes. 673  
b Drag sawing-machine, feed-cutters, etc. 674
- 537 Gaar, Scott, & Co., Richmond, Ind. Q 9. 673  
a Grain thrasher, separator, and cleaner. 673  
b Portable farm-engine. 674
- 538 Manley, Almond D., Washington, Mich. R and Q 9. 674  
Mounted railway tread-power and circular wood-saw. Notable features of power, centre balance, elevation easily varied when running, wrought chain, no cogs, centre roller drive, motion controlled by governor, runs steady with belt off, least traverse wheels, remarkable durability, greatest power at given elevation, never removed from trucks. 674
- 539 Blymyer Manufacturing Co., Cincinnati, Ohio. M and N 8. 673  
a Thresher and cleaner, corn-cob crushers, etc. 673  
b Cane-mills, steam-engine, sugar-evaporator, etc. 674
- 539a Wagoner, Elijah, Westminster, Md.—Feed-cutter and masticator. S 7. 673
- 530 Evans & Baird, West Chester, Pa. T 7 and 8. 673  
a Horse-railway power and thrasher. 673  
b Dairy churn and power. 675
- 531 Rankin Manufacturing Co., Allegheny, Pa.—Hand and power meat-choppers, sausage-stuffers, portable engine, etc. L 12. 674
- 532 Post, C. C., Burlington, Vt.—Implements for making maple sugar. C 24. 674
- 533 Slocum, W. H., & Bro., Philadelphia, Pa.—Apple-parer and corer, meat-cutter, raisin and currant cleaner. T 23. 674
- 533a Hughes, H. D., Radnor, Pa.—Flour barrel. A 22. 674
- 533b Evans, Wm. P., Malvern, Pa.—Wheat-feeder, oscillating engine, etc. J 25. 674
- 533c Mosher, A. J., Portland, Me.—Bag-holder. A 27. 674
- 533d Best, John, Lancaster, Pa.—Agricultural engines. K 8. 674
- 533e Branden Manufacturing Co., Brandon, Vt.—Howe scales. P 13. 674
- 533f Frederick, L. W., Hall, Ind.—Wagon. S 25. 674
- 533g Fairbanks & Ewing, 715 Chestnut st., Philadelphia, Pa.—Scales (manufacturers, E. and T. Fairbanks & Co., St. Johnsbury, Vermont), railroad track, weigh-lock, hay, coal, platform, and counter scales of all descriptions, fine gold and druggists' scales; also improved testing-machines for ascertaining the strength of metals, etc. Principal warehouses: Boston, New York, Philadelphia, Baltimore, New Orleans, San Francisco, St. Louis, Chicago, Louisville, Cincinnati, Cleveland, Buffalo, Pittsburg, Albany, Montreal, and London, England. L 24. 674
- 533h Day, S. A., & Co., Baltimore, Md.—Automatic incubator for hatching eggs. B 23. 674
- 533i Cooper, J. G., Scranton, Pa.—Wagon-spring brace. S 28. 674
- 533j Donner & Suhl, San Francisco, Cal.—Hay and stalk cutter. M 23. 674
- 533k Skinner & Wood, Erie, Pa.—Boiler and engine. K 8. 674
- 533l Chandler & Taylor, Indianapolis, Ind.—Farm-engine and saw-mill. R 11 and 12. 674
- 534 Boyer, Wm. L., & Bro., Philadelphia, Pa.—Farm grist-mills, railway horse-power, feed-cutter, lawn-mowers, saw-table, broom-winder. R 24. 674
- 535 Nittinger, A., jr., & Son, Philadelphia, Pa.—Butchers' machinery, tools, and supplies. T 24. 674
- 536 J. C. Hoadley Co., Lawrence, Mass.—Portable steam-engines. L 7. 674
- 537 Empire Portable Forge Co., Troy, N. Y.—Portable fan-blowing forges for farms. T 22. 674
- 537a Lee, E. S., & Co., Rochester, N. Y.—Tree pruner. Q and R 25. 674
- 537b West Grove Manufacturing Co., West Grove, Pa.—Liquid atomizer. N 10. 674
- 537c Wharry, John R., Moundville, West Va.—Vegetable and fruit slicer. N 21. 674
- 538 Ross, John, Williamsburg, N. Y.—Grain-mills, paint and drug mills, etc. R 23. 674
- 539 Hotsenpiller & Co., Springfield, Ohio.—Hominy-mill. M 21. 674
- 540 Corbett, A., Hicksville, N. Y.—Poultry incubator. C 24. 674
- 540a Bergner, George, & Co., Washington, Ill.—Apple and peach parer, apple corer and slicer. R 28. 674
- 540b Smith, John M., & Sons, Philadelphia, Pa.—Cedar water-tank, Scotch mashing-machine, valve for brewers and malt-houses. M 12. 674
- 541 Vanderbilt, Henry S., Washington, D. C.—Lifting-jack. I 17. 674
- 541a Stoddart, J. C., Lockport, N. Y.—Steam calliope. (*East end of Main Transit.*) 674
- 542 Dederick, P. K., & Co., Albany, N. Y.—Hay and cotton presses, balc-ny machines, coal-tubs, dumping-car, brick and tile machine, etc. Q 10. 674

## Machines, Implements, and Processes of Manufacture.

- 544 Furst & Bradley Manufacturing Co., Chicago, Ill.—Plows, harrows, hay-rakes, etc. Breaking and old-ground plows, sulky or riding plows, gang-plows, corn-cultivators, sulky hay-rakes, etc. O 25. 674
- 545 Garst, David W., Washington, D. C.—Dried-beef chopper. S 23. 674
- 546 Munson Brothers, Utica, N. Y.—Wheat-flouring and corn-grinding portable mill, millstone eye, spindles, and oil-tight bush. R 24. 674
- 547 Conrad, E. C., Philadelphia, Pa.—Coffee-machine. D 25. 674
- 548 Sandusky Machine & Agricultural Works, Sandusky, Ohio.—Cylinder corn-sheller. M 16. 674
- 549 Lombard, Daniel, Boston, Mass.—Rice and coffee cleaning mortars, coffee-shelling machine. P 23. 674
- 550 Dickey, A. P., Racine, Wis.—Fanning-mills, for cleaning all kinds of grain, perfectly separating all foul substances; also grades the grain, putting best out at the side of the fan, and balance in front; also cleans and separates all kinds of seeds. Will pay for itself in one season's use. Send for catalogue and prices. T 27. 674
- 550a Munsell & Dexter, Elizabeth, N. J.—Lifting-jack. I 28. 674
- 551 Toll, Chas. H., Schenectady, N. Y.—Brooms. H 15. 674
- 552 Mansfield Machine Works, Mansfield, Ohio.—Mounted portable steam-engine. P 8. 674
- 553 Mitchell, J. E., Philadelphia, Pa.—Farmers' grindstones, mounted, mower, knife-grinders, scythe and whetstones; grindstone of 1776. N 20. 674
- 554 Hazard, Thomas, Wilmington, Ohio.—Straw-cutters. O 22. 674
- 556 Bruner, M., Jr., Fremont, Ohio.—Hay-press. R 11 and 12. 674
- 557 Bailey Wringing-Machine Co., 99 Chambers st., New York, N. Y., American meat and vegetable choppers, for use of families, hotels, and butchers. More than 60,000 now in use. S 24. 674
- 558 Bushfield, W. H., Jersey City, N. J.—Dried-beef cutter. S 23. 674
- 559 Whitmore, D. H., Worcester, Mass.—Apple parer and slicer, meat-cutter, etc. N 22. 674
- 560 Foster, Calvin A., Fitchburg, Mass.—Meat-chopper and apple-parer. S 23. 674
- 560a Nevins, Wm., Titusville, Pa.—Combined machine for marking, ridging, planting, etc.; potato-digger. L 22. 674
- 561 Pierpont, C., & Co., New Haven, Conn.—Fodder-cutter. P 22. 674
- 562 Fitzhugh, J. R., Philadelphia, Pa.—Hay-elevator. P 19. 674
- 563 Hall's Self-feeding Cotton-Gin Co., New London, Conn.—Self-feeding cotton-gin. T 12. 674
- 564 Bates, Hyde, & Co., Bridgewater, Mass.—Power and hand cotton-gins. R 10. 674
- 566 Bradford, W. A., & Co., Chicago, Ill.—Cider-mill. T 13. 674
- 566a Wakeman, R., Port Deposit, Md.—Power-press. Q 11. 674
- 566b Emery, Horace L., Albany, N. Y.—Cotton-gin, lint-cleaner. Q 11. 674
- 566c Wilson Brothers & Co., Harrisburg, Pa.—Fodder-cutter. O 22. 674
- 566d Lee, George W., Homeworth, Ohio.—Fodder-cutter. T 25 and A 25. 674
- 566e Ross, John, Williamsburgh, N. Y.—Flour-mills, farm-mills, paint-mills, and mixers. R 23. 674
- 566f Esmond & Dunham, New York, N. Y.—Press and compress combined. S 24. 674
- 566g Cousland & Cousland, Philadelphia, Pa.—Adjustable picks, with movable bits. M 26. 674
- 566h Cooper, I. G., Scranton, Pa.—Hay and straw cutter. J 7. 674
- 566i Scharf, Louis, Philadelphia, Pa.—Combined water cooler and filter. I 19. 674
- 566j Baugh & Sons, Philadelphia, Pa.—Mills for crushing and grinding bones, minerals, woods, etc. K 25. 674
- 567 Dernel, H. F., & Co., Athens, N. Y.—Tools for cutting and storing ice. N 24. 674
- 567a Belcher & Taylor Agricultural Tool Co., Chicopee Falls, Mass.—Hay-cutters, vegetable-cutters, corn-sheller, and bag-holder. T 21. 674
- 567b Skinner, E. W., Sioux City, Iowa.—Adjustable sugar-cane crusher. T 12. 674
- 567c Deas, R. M. H., New York, N. Y.—Drinking-fountain. K 14. 674
- 567d Purdy, Hiram, Burlington, Iowa.—Cyclone heater, car-door, odorizing apparatus. I 28. 674
- 567e Barrows, Savery, & Co., Philadelphia, Pa.—Steamer for cooking food. I 8. 674
- 567f Aldrich, Isaiah, Philadelphia, Pa.—Can soldering and capping machine. M 24. 674
- 567g Morse, Dudley, Norwich, N. Y.—Hay-fork and wagon-jack. H 23. 674
- 567h Smith, J. G., Fauburg, Ill.—Boiler for cooking. C 24. 674
- 568 Chesley, Plumer, Chelsea, Mass.—Meat-chopper. R 24. 674
- 569 Hanc, S., & Bro., Lebanon, Pa.—Vegetable-cutters. M 22. 674
- 570 Longaker, Thomas F., Philadelphia, Pa.—Stable-hook. C 20. 674
- 571 Schenck, Marcus P., Fulton, N. Y.—Fruit-press, apple and horseradish grater. P 11. 674
- 572 Peabody, George H., Brooklyn, N. Y.—Rice huller and polisher. L 16. 674
- 573 Boomer & Boschert Press Co., Syracuse, N. Y. S and T 12.  
a Power cider-press (double platform), 200 tons capacity, sixty barrels in ten hours. Hand cider-press, power 125 tons. Wine-press, power 60 tons, Nos. 1, 2, and 3. Lard or tanking presses, power 80-120 and 300 tons. 673  
b Apple-grater. 674  
"For presses" for paper, cloth, etc., see Machinery Hall, E 39.

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 2a.

## Machines, Implements, and Processes of Manufacture.

- 574 Ross, E. W., & Co., Fulton, N. Y.  
P 22.  
a Feed-cutter, straw-cutter for paper-mills. 674  
b Crank paddle-churn. 673
- 575 Treat, J. A., Cleveland, Ohio.—L 12.  
a Washing boiler, and automatic blind governor. 674  
b Factory churn. 675
- 576 Speakman, Miles, & Co., West Chester, Pa. M 13.  
a Corn-sheller, insect-destroyer, pruning-shears, etc. 674  
b Butter-worker and butter-printing table. 675
- 577 Pilling, Geo. P., Philadelphia, Pa.  
a Milking-tubes. M 12. 675  
Silver patent tubes for milking cows without using the hands. No stripping required, saving time and labor. Set of four sent postpaid on receipt of two dollars. Also, capon and veterinary instruments.
- 578 Packer, Charles W., Philadelphia, Pa.—Ice-cream freezers. O 12. 675
- 578a Simmons & Sons, Bloomington, Ill.—Ice-cream freezer. M 10. 675
- 578b Burkhardt, W. H., & Co., Philadelphia, Pa.—Tank and casks. H 24. 675
- 578c Olmsted, John W., Northport, N. Y.—Ice-cream freezer. M 10. 675
- 578d Weinhausen, H., New York, N. Y.—Cream gauges, grape-sugar test, wine-testing apparatus, and dairy fixtures. M 12. 675
- 578e Conner, W. H., Agnew Mills, Pa.—Churns. M 11. 675
- 579 Koehler, J. G., Philadelphia, Pa.—Cedar-ware, churns, measures, etc. M 10. 675
- 580 Clement & Dunbar, Philadelphia, Pa.—Cedar-ware, churns, and ice-cream freezers. O 11. 675
- 581 Blatchley, C. G., Philadelphia, Pa.—Horizontal ice-cream freezer, cucumber-wood pumps. O 11. 675
- 582 Carter, Henry C., New York, N. Y.—Butter-pail. M 10. 675
- 583 Markham, H. C. & D. C., Lyons Falls, N. Y.—Curd-sink. M 12. 675
- 584 Hollister, King, & Young, Factory Point, Vt.—Shipping boxes. M 12. 675
- 585 Moos, Joseph, Philadelphia, Pa.—Ice-cream refrigerator and ice-cream shipping-apparatus. O 12. 675
- 585a Fisher, J. H., Chicago, Ill.—Refrigerator. K 11. 675
- 586 Chick, W. H., & Co., St. Louis, Mo.—Churns, egg-beater, and ice-cream freezers. M 11. 675
- 587 Keen & Hagerty, Baltimore, Md.—Ice-cream freezers, cake-mixer, and egg-beater. O 10. 675
- 588 Emmert, William P., Freeport, Ill.—Butter-churns, tread-power, etc. M 12. 675
- 589 Elliget, James, Cleveland, Ohio.—Bottles, kegs, mugs, and pitchers. M 10. 675
- 590 Reid, A. H., Philadelphia, Pa.—Butter-worker. L 11. 675
- 591 Rogers, Francis P., Philadelphia, Pa.—Milk-cans, pans, buckets, strainers, butter-kettles, etc. L 11. 675
- 591a Anchor Manufacturing Co., Philadelphia, Pa.—Barrels and kegs. I 26. 675
- 591b Judge, Owen, Scranton, Pa.—Barrel-heads. J 28. 675
- 591c Dibble, Andrew J., Franklin, N. Y.—Churns, milk-pans. L 8. 675
- 591d Downs, W. H., East Newport, Maine.—Churns. L 11. 675
- 591e Hollister, King, & Young, Factory Point, N. Y.—Butter package. M 12. 675
- 591f White Mountain Freezer Co., Lacombe, N. H.—Ice-cream freezer, ice-crusher. M 4. 675
- 592 Ellsworth, John T., Barre, Mass.—Oscillating churn. M 11. 675
- 592a Finnegan, A. J., Minneapolis, Minn.—Butter-package. M 10. 675
- 592b Burkhardt, Geo. J., & Co., Philadelphia, Pa.—Cedar reservoir and dye-tub. M 17. 675
- 592c Le Valley, Darius A., Pawtucket, R. I.—Revolving milking-stool. K 17. 675
- 592d Bettie, Harbert, Philadelphia, Pa.—Ice cream can holder. L 12. 675
- 592e Seed, Frederick, Cincinnati, Ohio.—Churn. L 11. 675
- 593 Guernsey, Daniel, Watertown, N. Y.—Gilt-edge milk-pans and cooler. L 10. 675
- 594 Shaw, Philander, Scituate, Mass.—Butter-working machine, butter-mould, and stamp. M 12. 675
- 595 Cornish & Curtis, Fort Atkinson, Wis.—Rectangular churn and butter-worker; without floats or agitators of any kind; durable, and easy to work. Endorsed by prominent dairymen everywhere. M 11. 675
- 596 Murdock, Albert L., Boston, Mass.—Dairies of the different breeds of cattle. H 17. 675
- 597 Justice, L. B., Philadelphia, Pa.—Machine for making ice cream, water ices, frozen fruits, etc. O 10. 675
- 598 Porter Blanchard's Sons, Concord, N. H.—Churns. N 12. 675  
The celebrated "Blanchard Churn" has been proved and improved and approved for over a quarter of a century, and over a hundred thousand of them are now in successful operation. It is simple, durable, effective, and cheap. Send to the manufacturers for churns, agencies, or descriptive circulars. "Get the best."
- 599 Thompson, S. W., jr., Detroit, Mich.—Barrel-shooks. C 20. 675
- 600 Hardin, L. S., Louisville, Ky.—New method of setting milk for making butter. M 12. 675
- 601 Bartlerond, John W., Churchville, Pa.—Churn, butter-worker, and cream-regulator. M 11. 675
- 602 Smith, Hamilton E., New York, N. Y.—Iron enameled churns. K 11. 675

## Agricultural Engineering and Administration.

## Agricultural Engineering and Administration.

- 603 Ashley, H. A., Springfield, Ohio.—Ditching-machine. D 19. 680
- 603a Bean, H. & B. F., Pawling, Pa.—Picket fence. D 24. 680
- 603b Ripley, Theodore, Hallowell, Maine.—Shovel scraper. C 20. 680
- 604 Pressey, G. W., Hammonton, N. J.—Stump-puller and rock-lifter. C 17. 680
- 605 Murdock, John, & Son, Poseyville, Ind.—Wheat ricker. M 15. 680
- 606 Bowen, C. M., Maine Avenue, N. J.—Stump, grub, and rock extractor. D 17. 680
- 607 Randolph, Theodore F., Morristown, N. J. Ditcher and excavator. C 18. 680
- 608 Fay, C. J., Camden, N. J.—Stump and rock lifter. R 11. 680
- 609 Hall, S. W., Elmira, N. Y.—Fencing-machine, machine-made worm-fence, bracket, and wire fences. O 23. 680
- 610 Patterson, William, Salem, N. J.—Wrought-iron road-scraper. D 18. 680
- 611 Cotton, A. C., Vineland, N. J.—Stone and stump extractor. D 17. 680
- 612 Drake & Parmley, Painesville, Ohio.—Fence-post base. D 18. 680
- 613 Rhodes & Waters, Elyria, Ohio.—Post-hole digger. C 19. 680
- 614 Starbuck, Nathan, Wilmington, Ohio.—Mounted ditcher. C 17. 680
- 615 Thompson, Woodard, Gardiner, Me.—Self-loading and unloading hod-road scraper, model of scraper, and model of railway joint. C 19. 680
- 616 Leatherbarrows, John, Philadelphia, Pa.—Wrought-iron and wire fences. D 17. 680
- 617 Pioneer Iron Works, Brooklyn, N. Y.—Portable iron railroad and steam road-roller. D 22. 680
- 617a Landis, Israel L., Lancaster, Pa.—Fence and gate models, step-ladder. B 22. 680
- 617b Frey, Abram, Philadelphia, Pa.—Portable fence. B 23. 680
- 617c Speakman, Thomas, Philadelphia, Pa.—Models of fences. B 23. 680
- 617d Treat, J. A., Cleveland, Ohio.—Carriage gate. (*Outside of Agricultural Building.*) 680
- 618 Chicago Scraper and Ditcher Co., Chicago, Ill.—Scraper and ditcher for roadmaking, repairing, and excavating. C 20. 680
- 619 Potts, William W., Swedeland, Pa.—Iron-post portable fence. Simple, durable, economical, and storm-proof. Saves time and money. D 23. 680
- 620 Rumford Chemical Works, Providence, R. I.—Fertilizers, bone charcoal, etc. K 21. 681
- 621 Josiah J. Allen's Sons, Philadelphia, Pa.—Guano, bone, and other fertilizers. D 28. 681
- 621a Fisher, W. A., Bryn Mawr, Pa.—Fertilizers. D 26. 681
- 622 Bradley Fertilizer Co., Boston, Mass.—Fertilizers. H 28. 681
- 622a Jarvis & Hooper, Detroit, Mich.—Fertilizers. B 26. 681
- 623 Ward's Fertilizer Co., Boston, Mass.—Odorless fertilizers. D 28. 681
- 624 United States Fertilizing & Chemical Co., 104 Chestnut street, Philadelphia, Pa.—Phosphatic salts, bone, and fertilizers. Sole owners of Pratt's patent "acid grinding" process, by which the greatest percentage of available bone phosphate of lime is obtained. The "national soluble bone" manufactured under this process is guaranteed to contain not less than from 28 to 33 per cent. of available bone phosphate of lime. Also manufacturers of agricultural chemicals generally. C 28. 681
- 625 Baugh & Sons, Philadelphia, Pa.—Raw bone superphosphate, ground raw bones; nitrogen. C 28. 681
- 626 Matheys, Charles F., Philadelphia, Pa.—Nitro-phosphate and ground bone. E 26. 681
- 627 Ames, Manning, & Ames, Hagerstown, Md.—Buffalo-bone meal for agricultural purposes. C 26. 681
- 628 Crocker, L. L., Buffalo, N. Y.—Fertilizers for grain, tobacco, cotton, etc., plant-food for plants and flowers. C 26. 681
- 629 Peck Brothers, Northfield, Conn.—Bone-dust. D 28. 681
- 630 Franklin Glue Works, Pittsburg, Pa.—Bone-dust, etc. K 20. 681
- 631 White, Geo. E., 159 Front Street, New York, N. Y.—Superphosphates, acid bone-black, raw materials for fertilizers, and agricultural chemicals. This house furnished all the fertilizers purchased by the Centennial Commission for its farms where the mowers and reapers are tested. D 28. 681
- 632 Swift & White, New York, N. Y.—Superphosphate of lime, ground bone, dried ground meat, and refined poudrette. C 25. 681
- 633 Pacific Guano Co., Boston, Mass.—Commercial fertilizers. A and B 28. 681
- 633a Mapes, Charles V., New York, N. Y.—Guano, bone, phosphate, etc. E 28. 681
- 634 Lister Brothers, Newark, N. J.—Superphosphate of lime, guano, ground bone, bone charcoal, sulphate of ammonia, agricultural salts, and other fertilizers. C 25. 681
- 635 Tygert, J. E., & Co., Philadelphia, Pa.—Bone phosphate and ground bone. C 25. 681
- 636 Atkinson, Empson, Woodstown, N. J.—Machine for cutting and setting corn, road-scraper. S 28. 681
- 637 Harrisburg Fertilizer Co., Harrisburg, Pa.—Flour of bone, ground bone superphosphate, animal compost, and lubricators. B 25. 681
- 638 Walton, Whann, & Co., Wilmington, Del.—Artificial fertilizers, bone-meal, and ground bone. C 25. 681
- 639 Kyser, James, & Son, Cleveland, Ohio.—Whiffletree, check, and neck-yoke fastenings. M 10. 681

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 20.



## Agricultural Engineering and Administration.

- 640 Remington, E., & Sons, Ilion, N. Y.—Carriage gearing. P 20. 682
- 640<sup>a</sup> Drown, W. A., Philadelphia, Pa.—Umbrellas for wagons, carriages, and mowers. R 17. 682
- 640<sup>b</sup> Tibbles, George N., Jersey City Heights, N. J.—Power or speed traction engines. C 17. 682
- 640<sup>c</sup> Bradbury, Henry, Philadelphia, Pa.—Packing boxes. I 26. 682
- 641 Higginum Manufacturing Co., Higginum, Conn.—Trucks. L 25. 682
- 642 Allen, R. H., & Co., New York, N. Y.—Farm cart, water barrel, garden barrows, etc. Q and R 25. 682
- 642<sup>a</sup> Tubular Barrow & Truck Co., Jersey City, N. J.—Barrow and trucks, coal-ing tubs. R 26-28. 682
- 642<sup>b</sup> Fitch, Homer W., & Co., Lithgow, N. Y.—Hay-conveyer. M 25. 682
- 643 Mount, Joseph K., & Co., Hightstown, N. J.—Model hay-conveyer. C 24. 682
- 644 Beecher, C. T., Waterbury, Conn.—Whiffletree gear. N 22. 682
- 645 Cohu, A. B., New York, N. Y.—Wagon-jack. P 28. 682
- 646 State of Massachusetts, Boston, Mass.—Maps and plans of farm buildings. E and F 23. 683
- 646<sup>a</sup> Jewett, Solomon W., Rutland, Vt.—Architectural models. D 24. 683
- 647 Osborne Manufacturing Co., New York, N. Y.—Bird and animal cages. D 25. 683
- 648 Bost, Caleb E., Davidson College, N. C.—Beehive. J 28. 683
- 648<sup>a</sup> Goldsmith, Francis J., Painesville, Ohio.—Invertible troughs. B 22. 683
- 648<sup>b</sup> Losee, Alfred, New York, N. Y.—Folding coop. C 19. 683
- 648<sup>c</sup> Isham, Charles R., Peoria, N. Y.—Glass honey-boxes. A 27. 683
- 649 Gay & Bryant, Dresden, Ohio.—Post-hole digger. C 19. 683
- 650 Shields & Bro., Philadelphia, Pa.—Tanned hog's head, hog-rings and holders. B 24. 683
- 651 Collings, E. Z., Waterford, N. J.—Cranberry-plants growing, representing cranberry-bog. C 20. 683
- 652 Boyd, G., & Co., Philadelphia, Pa.—Fruit and grain-dryer. C 22. 683
- 653 Lockwood, James L., & Co., Stamford, Conn.—Portable fruit-drier. C 24. 683
- 654 Leonard, Henry, Basil, Ohio.—Revolving buckeye-ball on pedestal and college building. C 24. 683
- 655 Murphy, R. R., Fulton, Ill.—Honey extractor, for removing honey from the comb. C 24. 683
- 656 Gunther, G., New York, N. Y.—Brass, silver-plated, and japanned bird-cages. C 25. 683
- 656<sup>a</sup> Halderman, Frank, Mahanoy City, Pa.—Bird cage. K 7. 683
- 657 Murphy & Broom, Philadelphia, Pa.—Bird-cages, wire garden-furniture, rustic work, etc. C 26. 683
- 658 Wimpfheimer, David, Philadelphia, Pa.—Automatic vinegar apparatus. D 23. 683
- 659 Harris, Milo, Jamestown, N. Y.—Domestic fruit-dryer, model of lumber-kiln and of coal-oil still. D 23. 683
- 660 Ryder, B. L., Chambersburg, Pa.—American drier or pneumatic evaporator. D 24. 683
- 661 Tiffany, O. F., San Francisco, Cal.—Fruit-dryer. C 21. 683
- 661<sup>a</sup> Jones Fruit Evaporating Co., Chicago, Ill.—Pneumatic evaporator. C 23. 683
- 661<sup>b</sup> Ellsbury & Hayward, Winona, Minn.—Minnesota fruit and illustrations. C 24. 683
- 661<sup>c</sup> Cowder & Jones, Norristown, Pa.—Wind-mill with water-wheel. (*Outside of building.*) 683
- 661<sup>d</sup> Chapman, Frank W., Morrison, Ill.—Honey-extractor. A 27. 683
- 661<sup>e</sup> Millett, D. Caldwell, Holmesburg, Pa.—Hive and bees. C 25. 683
- 661<sup>f</sup> Reynolds, A. J., & Co., Washington, D. C.—Fruit-evaporators. C 22. 683
- 661<sup>g</sup> Chapman, John Winslow, Hyannis, Mass.—Barrel-heading, etc. A 22. 683
- 661<sup>h</sup> Bradford, H., Philadelphia, Pa.—Cotton-bale ties. H 17. 683
- 661<sup>i</sup> Bouscaven, G., Cincinnati, Ohio.—Model of apparatus to extract saccharine juices of plants by diffusion. T 22. 683
- 661<sup>j</sup> Deltz, George A., Chico Cal.—California fruit-dryer. C 18. 683
- 661<sup>k</sup> Ellis, Charles R., New York, N. Y.—Glass and marble tank. A 20. 683
- 662 Lindermann, O., & Co., New York, N. Y.—Bird and animal cages. D 25. 683
- 663 Williams, John, South Haven, Mich.—Model of evaporator. D 24. 683
- 664 Goodrich, C. C. & F. W., Portland, Conn.—Tobacco-hook with wilting-frame and builders' horse. Harvest your tobacco without laying it on the ground. D 25. 683
- 665 Kappe, W. J. H., Quincy, Ill.—Transportation coop for live poultry. D 25. 683
- 666 Hendryx & Bartholomew, Ansonia, Conn.—Bird cages and trimmings. D 25. 683
- 667 Conrad, E. C., Philadelphia, Pa.—Bird cage. D 25. 683
- 668 O'Neill, Wm. C., & Co., Philadelphia, Pa.—Kegs and barrels made with single staves. F 28. 683
- 669 Elphee, Edmund, Montezuma, N. Y.—Grain-seed wreath-picture, representing the harvest of 1875. H 15. 683
- 669<sup>a</sup> Scantlin, Thos., & Sons, Evansville, Ind.—Sugar-evaporator, self-measuring oil-tank. C 23. 683
- 669<sup>b</sup> Kennard, Amos, Clearfield, Pa.—Cant-hook for rolling logs in saw-mill. M 24. 683
- 670 Foot, Scovill D., New York, N. Y.—Portable fruit-preserver. I 23. 683
- 671 Vermont Farm-Machine Co., Bel-lows Falls, Vt.—Sugar-evaporator, and fixtures for making sugar. K 15. 683

## Agricultural Engineering, Administration, Management.

- 672 Wood, Robert, & Co., 1136 Ridge avenue, Philadelphia, Pa.—Ornamental iron and bronze works. Fountains, vases, verandas, stairs, lampposts, improved stable-fittings and furniture, wire-work of every description, wrought and cast iron railings. Also "statuary bronzes"—colossal, heroic, or life-size—in the highest style of art. L 10. 683
- 673 Shaw, Philander, Scituate, Mass.—Beehive, with comb and hive of bees. M 12. 683
- 674 Dana, C. H., West Lebanon, N. H.—Automatic label-machine, labels, punches, and registers for marking live-stock. N 12. 683  
This machine is simple in its construction. With it labels of any description can be made with great rapidity for attaching to the animal's ear.  
Four thousand labels can be made per hour. They are made of iron-wire rolled flat and washed with tin, and stamped with numbers from one to one thousand, and with any name ordered. Mr. Dana is offering the label machine for foreign countries, and good-will of business.
- 674a Rose, W. L., Wadesboro', N. C.—Iron cotton-tie. D 24. 683
- 674b Worrall, E. Penn, West Chester, Pa.—Beehive, showing bees at work. B 19. 683
- 674c Jackson, James L., New York, N. Y.—Stable fixtures. T 10 and 11. 683
- 675 Deardorff, Isaac N., Canal Dover, Ohio.—Smoke-house stove. It saves fuel, increases volume of smoke, with easy regulation of production and distribution. Removes all danger from fire. N 21. 683
- 676 Betts, Albert C., Troy, N. Y.—Machine for making wire fencing, with samples. P 23. 683
- 677 U. S. Wind-Engine & Pump Co., Batavia, Ill.—Windmills for pumping water, etc. Q 23. 683
- 678 State of Michigan.—Soils. H and I 20 to 21. 690
- 678a State of New Jersey.—Soils, sub-soils, greensand marls, calcareous marls, mineral phosphates, fish guano, cancerine, lime, superphosphates, etc. E 17-18. 690
- 678b Rider, A. J., Atsion, N. J.—Cranberry bog and basket with cranberries. F 26. 690
- Tillage and General Management.**
- 679 Hirner, C. G., Allentown, Pa.—Farmers' Union Cattle-Powder, an artificial food for fattening stock and to increase the quantity and quality of milk and butter. B 28. 692
- 679a Rynal, P. H., Jackson, Mich.—Horse and cattle food. R 27. 692
- 680 Phillips, J. B., Philadelphia, Pa.—Devices for training and educating horses. B 26. 692
- 680a May, David T., & Co., New York, N. Y.—Artificial leg of horse, with perforated stocking. B 21. 692
- 681 Miller, Frederick A., Philadelphia, Pa.—Condition powder for live-stock. B 26. 692
- 682 Hoepfner, Martin, 311 Columbia av., Philadelphia, Pa.—Prepared food for cage-birds. Natural food for mocking-birds, thrushes, blackbirds, nightingales, robins, starlings, skylarks, and all soft-billed birds. B 28. 692
- 683 Greenough, J. J., Syracuse, N. Y.—Machine for cleaning animals. B 22. 692
- 684 Long, J. C., Jr., Philadelphia, Pa.—Prepared food for mocking-birds; grains and seeds for birds, pigeons, and poultry; bird invigorator; drinking fountains, etc. B 26. 692
- 685 Kirk, Charles H., & Co., Philadelphia, Pa.—Prepared food for horses and cattle. B 26. 693
- 686 Ausable Horse Nail Co., New York, N. Y.—Horseshoe nails. B 24. 693
- 687 Caryl, A. H., & Son, Forge Village, Mass.—Horseshoe nails pointed and finished, also not pointed. These nails are made by hammers from hot rods, and of the best Norway iron. B 24. 693
- 688 Burden, H., & Sons, Troy, N. Y.—Working model of horseshoe machine, samples of horse-shoes, boiler rivets, and merchant iron. A 23. 693
- 689 Tallman, G. W., New York, N. Y.—Elastic hose stocking. B 23. 693
- 690 American Shearer Manufacturing Co., Nashua, N. H.—Shearing and clipping machines. B 22. 693
- 691 Putnam, S. S., & Co., New-Jersey, Mass.—"Government standard" forged and hammer-pointed horseshoe nails. These nails are made from the best Norway iron, are drawn out under hammers when nearly at a welding heat, whereby they are enabled to produce a nail that is tough and stiff, and perfectly reliable in all respects, ready for the blacksmith to drive. B 24. 693
- 692 Lhernault, Auguste, New York, N. Y.—Machine for clipping horses. B 21. 693
- 692a Russell, William, Cincinnati, Ohio.—Hand and machine made horseshoes, etc. B 23. 693
- 692b Hull, Theodore, Newark, N. J.—Horseshoes. B 24. 693
- 692c Davis, H. S., Camden, N. J.—Horseshoes. B 24. 693
- 692d New Hampshire State Centennial Board.—Agricultural literature. E 20-21. 693
- 692e Campbell, C. A. J., Philadelphia, Pa.—American trotting-horse shoes. B 23. 693
- 692f Baker, Joseph P., Melrose, Mass.—Horseshoes, etc. B 24. 693
- 693 Smith, Aaron W., Manchester, N. H.—Jointed horseshoes. B 24. 693
- 694 Atkins, J. L., Nashville, Tenn.—Horseshoes and plates. B 24. 693
- 695 Rhode Island Horseshoe Co., Providence, R. I.—Machine-hammered horseshoes. B 23. 693
- 696 Ward, Henry A., Rochester, N. Y.—Stuffed Bactrian camel and Shetland pony. K 26 and 27. 693
- 697 Gadsden, John W., Philadelphia, Pa.—Veterinary anatomical specimens. A 28. 693

## Veterinary Appliances.

- 698** National Horse Nail Co., Vergennes, Vt.—Horseshoe nails. B 24. 693
- 699** Gornes, John M., St. Louis, Mo.—Horseshoes. B 24. 693
- 700** Carroll, William, Philadelphia, Pa.—Horseshoes. B 24. 693
- 701** Day, Austin G., Seymour, Conn.—H 27-28.
- a Vulcanized bituminous concrete paving-blocks. 103
- b Kerite manufactured articles; hard-rubber goods. 285
- 701a** McElroy & Co., Philadelphia, Pa.—Clay pipes. H and I 25. 254
- 701b** Ashbourne & Co., Philadelphia, Pa.
- a Coconut-cream oil and soap. 201
- b Ink from coconut shell. 202
- c Coconut tooth-powder, cosmetic. 203
- 702** Tower, L. C., Chester, Pa.—Thermometers. A 16. 320
- 703** Collison, H. C., Dover, Del.—Syrup drip for measuring-vessels. S 25. 320
- 704** Wheelock, Jerome, Worcester, Mass.—High-pressure steam engine. *Engine house*, T 16. 552
- 705** Nease & Levy, Philadelphia, Pa.—High-pressure engine. Engine rooms, T 13. 552
- 705a** Canby, George, & Co., Philadelphia, Pa.—Pumps for supplying aquariums with water. A 24. 560
- 705b** Knowlton, E. J., Ann Arbor, Mich.—Bathing apparatus. K 7. 594
- 708** Protective Fire Apparatus Co., New York, N. Y.—Apparatus for extinguishing fires. (*South side of Agricultural Hall.*) 594
- Agricultural Hall is protected by this apparatus.*
- The Protective Fire Apparatus consists of four systems:
- System 1. Injecting into burning buildings or compartments of vessels pure carbonic acid gas.
- System 2. Impregnating water with carbonic acid gas as it flows through the main water-pipe or fire-plugs, thereby throwing through the hose upon the fire a continuous stream of carbonic acid gas.
- System 3. Throwing by hose-attachment impregnated water from the apparatus itself.
- System 4. Injecting beneath the surface of oil or fluids carbonic acid gas.
- All for the purpose of extinguishing fire.
- 708a** Murtfeldt, Miss, Kirkwood, Mo.—Botanical specimens of Missouri. I 22. 709
- 707** Janes & Kirtland, New York, N. Y.—Ornamental fountain. (*Intersection of nave and main transept.*) 722

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

# GREAT BRITAIN.

(South of South Transept, east of Nave.)

## Agricultural, Animal, and Vegetable Products.

### Arboriculture and Forest Products.

- 1 Nicoll, Donald, London.—Starch and compounds rendering fabrics and timber unflammable; carbon combined with caoutchouc, for the preservation of wood and iron. 600

### Agricultural Products.

- 2 Delf, W., Colchester.—Wheat. 620  
3 Field, W., Liverpool.—Oats. 620

### Animal and Vegetable Products.

- 5 Chapman, Edwin, & Co., London.—Koumiss, a beverage prepared from cow's milk; koumiss extract, for converting milk into koumiss. 651  
6 Evans & Stafford, Leicester.—Stilton cheese. 651  
7 Hooker, J., London.—A large tin of milk which has been exposed to the air for five years; also desiccated milk, condensed milk, and other preparations made with milk. 651  
9 Green, John, London.—Gelatine for cigar-boxes, printers, engravers, and artificial-flower makers. 652  
14 Lovey, Edward, Ponsnooth, Cornwall.—Beehives, with samples of honey and wax. 654  
15 Schneider, Edward Albert, London.—Liquid essence of beef. 656  
16 Nicoll, Donald, London.—Tea and coffee combined with milk and sugar, contained in soluble capsules for distribution in single cups; aerated beverages in vessels to allow rapid distribution in single draughts; preserved food. 656  
17 Geyelin & Co., London.—Concentrated animal and vegetable food. 656  
18 Goodall, Backhouse, & Co., Leeds.  
a Yorkshire relish sauce. 656  
b Orange quinine wine. 660  
19 Keen, Robinson, Bellville, & Co., London.—Preparations from mustard, barley, oats, etc. 656  
20 Pratt, James, London.—Sauce. 656  
21 Smith, T. & H., & Co., Edinburgh.  
a Essences of coffee and coffee with chicory. 656  
b Aerated waters. 660  
c Chemical products. 200  
d Flavoring extracts. 203  
22 Jaap, J., Glasgow.—Curry powders. 656  
23 Menier, Emile, London.—Chocolates and cocoas. 656  
23a Yuille, Andrew, Glasgow.  
a Essences of coffee and chocolate, coffee and milk, condensed milk. 656  
b Vinegar. 660

- 23b Mellin, Gustav, London.—Non-far-inaceous food for infants and invalids. 656  
25 Mackay, John, Edinburgh.—Fluid flavoring quintessences and articles of diet for table use. 656  
26 Ledger, H., & Co., London.—Pure extract of meat. 656  
27 Ball, James, London.—Sauce. 656  
28 Lea & Perrins, Worcester.—Sauce. 656  
37 Crosse & Blackwell, London.—Pickles, sauces, vinegars, jams, jellies, marmalades; potted and preserved meats; preserved fruits, soups, and fish; oils for salads, etc.; preserved provisions, sausages, vegetables, etc. 656  
38 Field, W., Liverpool.—Oatmeal. 657  
38a Richards & Co., London.—Self-raising flour. 657  
39 Hunter, John, & Son, Woodhall Mills, Juniper Green, near Edinburgh.—Oatmeal and pot barley. 657  
40 Plunkett, John, & Co., Portland Works, Dublin.—Malt for brewing and distilling, and roasted malt for coloring and flavoring porter and ale. 657  
41 McCann, John, Beaumont Mills, Drogheda.—Oatmeal and groats. 657  
42 Maw, Thomas, Leeds.—  
a Pickles and sauces. 656  
b Syrups. 659  
c Vinegar. 660  
d Loxenges, baking powder. 661  
42a Campbell, Thomas, Allentown, Pa.—Malt and whisky. 660  
42b Haig, J., & Co., Scotland.—Whisky. 660  
43 Corry, William, & Co., Belfast, Ireland.  
a Aerated waters from Cromac Springs, Belfast. 660  
b Non-metallic valves, plungers, connections, taps, and cylinder-linings. 565  
44 Burke, Edward & John, Dublin.—English ales, Dublin stout, Irish and Scotch whiskies. 660  
44a Grant, Thomas, The Distillery, Maidstone.—Cherry brandy. 660  
44b Cork Distillery Co., Cork.—Whisky. 660  
45 Wright, Herbert, & Co., Diamond Brewery, Dover.—Pale ale and stout. 660  
46 Ind, Coope, & Co., Burton-on-Trent, Staffordshire.—Ale. 660  
46a Inman Brothers, Huddersfield, Yorkshire.—Aerated waters. 660  
46b Bewley & Draper, Dublin.—Aerated waters. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Machines, Implements, Engineering, and Administration.

- 47 Bindley & Co., Burton-on-Trent.—Ales. 660
- 47a Tennent, J. & R., Glasgow.—Bottled ales. 660
- 48 Mott & Co., Leicester.—Cowslip wine. 660
- 49 Muir, Jas., & Son, Calton Hill Brewery, Edinburgh.—Ales. 660
- 49a Cantrell & Cochrane, Dublin.—Ginger ale, aerated beverages, etc. 660
- 50 Johnson & Co., Canterbury.—Pale ale. 660
- 50a Murree Brewery Co., Punjab, East India.—Bottled ales. 660
- 51 Pendock Brothers, Bristol.—Cider and perry. 660
- 52 Richardson, Earp, & Slater.—Trent and Northgate Brewery, Newark-upon-Trent.—Ale. 660
- 53 Stevens, Thomas, Wrexham, North Wales.—Ornamental confectionery, birthday and christening cake, meringues, medallions, ornamental sugar-stand; rich cake. 661
- 53a Fry, Joseph Storrs, & Sons, Bristol.—Chocolate and cocoa, and specimens illustrative of the process of manufacture. 661
- 54 Glasling, Anthony S., & Sons, Eye, Suffolk.—Fancy biscuits, baking powder. 661
- 54a Allen, Frederick, & Sons, London.—Confectionery and medicated confectionery. 661
- 54b Smith, Thomas, & Co., London.—Wedding-cakes, ornaments, novelties for parties. 661
- Textile Substances of Vegetable or Animal Origin.**
- 56 The Mill Hill Wool and Rag Extracting Co. (limited), Mill Hill Works, Huddersfield.—Wools made from old rags, etc. 667
- 57 Bowes, John L., & Bro., Liverpool.—Raw materials used in the woollen and worsted trade. 667
- 58 Smith, David, & Co. (limited), Kensington Works, Halifax, Yorkshire.—Cleaned wools and wools extracted from waste products. 667
- Machines, Implements, and Processes of Manufacture.**
- 60 Wills, Arthur Winkler, Park Mills, Birmingham.—Hoes, axes, etc. 670
- 62 Fison, J. P., Teversham Works, Cambridge.—Agricultural machinery: vertical steam engine and boiler, chaff cutter, centrifugal pump, steam threshing-machine and chain harrow, models of portable steam engine, movable hut, centrifugal pump, and furrow plows. 670
- 63 Fussell, James, Sons, & Co., Mell's Iron Works, near Frome, Somersetshire.—Edge tools used in agriculture. 670
- 64 Wilkinson, William, & Sons, Spring Works, Sheffield.—Sheep and garden shears. 672
- 64a Greening, N., & Sons, Warrington.—Woven wire for rice, flour, and other mills. 673
- 64b Brown, J. B., & Co., London.—Galvanized wire netting, etc. 673
- 66 Lloyd, T., & Sons, London.—Flour mills, dressing machines, grinding mill, and coffee mills. 673
- 66a Cheavin, G., Boston, Lincolnshire.—Filters. 673
- 66b Barnard, Bishop, & Barnards, Norwich.—Galvanized wire netting. 673
- 66c Needham & Kite, London.—Filter press for clarifying liquids. 673
- 67 Crook, Graham, & Co., Halifax.—Boilers. 674
- 67a Kay & Hilton, Liverpool.—French burr millstones for wheat grinding. 674
- 68 Clark & Dunham, London.  
a Mill stones and lubricators. 674  
b Chronometers for measuring and weighing grain. 322
- 68a Wellock, J., & Co., Bradford.—Waterproof material for cart and wagon covers. 682
- 69 Aveling & Porter, Rochester, Kent.—Agricultural locomotive engine, locomotive crane engine, steam road roller wagons for road locomotive engines. 682
- 70 Neighbour, G., & Sons, London.—Beehives and bee furniture. 683
- 71 Barnard, Bishop, & Barnards, Norwich.—Stable fittings. 683
- 72 Lovey, Edward, Cornwall.—Beehives. 683
- 73 Colthurst, Symons, & Co., Bridge-water.—Scouring bricks. 206
- 74 Star Plate Universal Polishing Powder Co., London.—Polishing powder. 206
- 75 Jaap, J., Glasgow.—Artificial yeast. 200
- 76 Higgin, T., & Co., Northwich.—Salt. 200
- 77 Harper, Twelvetrass, & Co., London.—Soap powder. 201
- 78 Rawlins & Son, Prescot.—Ultra-marine, smalts, etc. 202
- 79 Eastwood & Co., London.—Red terra cotta chimney shafts. 206
- 80 Phillips, J., & Co., Devonshire.—Terra cotta bricks and drain pipes. 206
- 81 Johnson & Co., Sussex.—Terra cotta. 206
- 82 Edwards, J., & Son, Burslem.—Ironstone white ware and fancy decorated goods. 210
- 83 Edwards, J., Fenton.—Porcelain and ironstone china. 213

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

# NEW ZEALAND.

(East Aisle, Columns 1 to 5.)

## Agricultural Products, Textile Substances.

### Agricultural Products.

- 1 Banks, E. H., Christchurch. — Oats and other cereals. 620
- 2 Wood, W. D., Christchurch. — Wheat. 620
- 3 Cunningham, P., & Co., Christchurch. — Wheat grown in Canterbury. 620
- 4 Ruddenkian, J. G., Addington, Canterbury. — Wheat. 620
- 5 Wilkins, Robert, Christchurch. — Perennial rye grass and cocksfoot seed. 624

### Textile Substances of Vegetable or Animal Origin.

- 6 Peter, W. S., Anama, Ashburton, Canterbury. — Merino wool. 667

- 7 Bealey, Samuel, Canterbury. — Merino and Romney Marsh wool. 667

- 8 Rutherford, A. W., Amuri, Nelson. — Merino wool. 667

- 9 Anstey, G. A., Amuri, Nelson. — Merino wool. 667

- 10 Wason, J. Cathcart, South Rakaia, Canterbury. — Wools. 667

- 11 Hall, John, Hororata, Canterbury. — Merino wool. 667

- 12 Rickman, F. M., Rangiora, Canterbury. — Romney Marsh wool. 667

- 13 Braithwaite, Arthur, Hutt, Wellington. — Romney Marsh wool. 667

# NEW SOUTH WALES.

(East Aisle, Columns 1 to 5.)

## Animal and Vegetable Products.

### Animal and Vegetable Products.

- 1 Fallon, James T., Albury. — Wines. 660
- 2 Munro, A., Bebeah, Singleton. — Wines. 660
- 3 Carmichael, G. L. & J. B., Porphyry, Williams River. — Wines. 660
- 4 Brecht, Carl J. P., Rosemount, Denman. — Wines. 660

- 5 Powell, Edward, Richmond. — Wines. 660

- 6 Parnell, Montague, West Maitland, Hunter River. — Wines. 660

- 7 Wyndham, Wadham, Bukkulla, Inverell. — Wines. 660

- 8 Wyndham, George, Branxton, Hunter River. — Wines. 660

- 9 Doyle, J. F., Kaludah, Lochinvar. — Wines. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

# SOUTH AUSTRALIA.

(East Aisle, Columns 1 to 5.)

## Machines, Implements, and Accessories of Manufacture.

### Machines, Implements, and Accessories of Manufacture.

- 1 South Australian Commissioners, Adelaide.—Reaping Machine. 672
- 2 South Australian Commissioners, Adelaide.—Castings from South Australian iron ores. 111

3 Saunders, Robert, Manager of the Burra Burra Copper Mine, near Adelaide.—Model of improved ore dresser. 505

4 Hancock, H. R., Moonta Copper Mines, near Adelaide.—Jigging machine. 591

# CAPE OF GOOD HOPE.

(South of South Transept; east of Nave.)

## Agricultural, Animal, and Vegetable Products, Textile Substances.

### Agricultural Products.

- 1 Letterstedt & Co., Cape Town.—Wheat. 620
- 2 Clear, E., Cape Town.—Wheat. 620

### Animal and Vegetable Products.

- 3 Dier & Diets, Port Elizabeth.—Skins. 652
- 4 Barry, Arnold, & Co., Cape Town.—Wheat flour. 657

### Textile Substances of Vegetable or Animal Origin.

- 5 Grewar, John W., Uitenhage.—Scoured wool. 667

6 Priest, W., Graff Reinnet.—Fleece wool. 667

7 Rubidge, C., Graff Reinnet.—Grease wool. 667

8 Stewart, A. C., & Co., Port Elizabeth.  
a Grease and scoured wool. 667  
b Angora hair. 669

9 Court, P. W., Port Elizabeth.—“Fidus,” snow-white, and grease wool. 667

10 Barry & Nephews, Cape Town.—Washed and scoured wool. 667

11 Barry, Arnold, & Co., Cape Town.—Washed and grease wool. 667

12 Dier & Diets, Port Elizabeth.—Wool. 667

13 Barry & Nephews, Mossel Bay.—Aloes. 272

# JAMAICA.

(South of South Transept, east of Nave.)

## Pomology.

### Pomology.

- 1 Thompson, Robert, Jamaica.—A succession of fruit by each steamer during the season, including oranges, limes, lemons,

citrons, shaddocks, forbidden fruit, ripleys pines, sugar-loaf pines, black pines, bananas, mangoes, yams, coconuts, breadfruit, etc.

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## CANADA.

(East Aisle, Columns 4 to 7.)

## Pomology, Agricultural Products, Land and Water Animals.

## Arboriculture and Forest Products.

- 1 Munro, D. R., St. Johns, N. B., Canada.—Collection of forest woods, shrubs, etc., evergreen and deciduous, indigenous to the province of New Brunswick, used for shipbuilding, constructional, cabinet, and ornamental purposes, polished, etc. Sixty-seven specimens, accompanied with foliage and cone, interesting and instructive to the student of nature. Collected and prepared by D. R. Munro. 600
- 2 Alder, M., Victoria, B. C.—Charcoal. 600
- 3 Miller, J. & J., New Mills, Restigouche, N. B.—Extract of hemlock bark. 602

## Pomology.

- 9 Fisher, M., Victoria, B. C.—Cranberries. 610
- 10 Loggie, A., & Co., New Westminster, B. C.—Cranberries. 610

## Agricultural Products.

- 11 Rennie, Wm., Toronto, Ont.  
a Grains. 620  
b Seeds. 624
- 12 Murton, H., Guelph, Ont.—Oatmeal. 620
- 13 Wilson, Jas., Fergus, Ont.—Oatmeal. 620
- 14 Martin & Sons, Mount Forrest, Ont.—Oatmeal. 620
- 15 Aspden & Pritchard, London, Ont.—Oatmeal and oats. 620
- 16 Scott & Co., Highgate, Ont.—Oatmeal. 620
- 17 McKay, Thomas, & Co., Ottawa, Ont.—Oatmeal. 620
- 18 Corn Exchange Association, Toronto, Ont.—Grain and oatmeal. 620
- 19 Weatherston, N., & Co., Toronto, Ont.—Grain. 620
- 20 Charlesworth, M., & Son, Egmondville, Ont.—Bran and shorts. 620
- 21 Morton, Geo., & Son, Kipton, Ont.—Malt. 620
- 22 Osborne, Wm., Hamilton, Ont.—Malt. 620
- 23 Slater, R. P., Galt, Ont.—Malt. 620
- 24 Northwood, Howard, Chatham, Ont.—Malt. 620
- 25 Kerr, J. R., Victoria, B. C.—Grass, oats, and wheat. 620
- 26 Tolmie, Dr., Victoria, B. C.—Wheat in the stalk. 620
- 27 Boyd, J., Victoria, B. C.—Grass and cereals. 620
- 28 Council of Agriculture, Montreal, Quebec.—Cereals. 620

- 29 Brodie & Harvey, Montreal, Quebec.—Corn, oatmeal, and buckwheat. 62

- 30 Advisory Board of P. E. Island, Charlottetown.—Cereals. 62

- 31 Canadian Commission.  
a Corn-wheat grown by Indians of British Columbia, and cereals from Manitoba. 62

- b Indian or wild tea and wild hops from Manitoba. 62

- 32 Advisory Board of Nova Scotia.  
a Cereals. 62  
b Seeds. 62

- 33 Ontario Advisory Board, Toronto, Ont.—Cereals from counties of York, Perth, Simcoe, Bruel, Huron, Wellington, Peterboro', Cardwell, Durham, Essex, Hastings, Lincoln, Lanark, Middlesex, Victoria, Russell, Peel, Frontenac, Lennox, Kent, Renfrew, Wentworth, Northumberland, Lambton, Carleton, Prince Edward, Addington, Waterloo, Haldimand, Brant, Grey, Oxford, and Ontario. 62

- 34 Muirhead & Gray, London, Ont.  
a Barley and oatmeal. 62  
b Peas. 62

- 35 Girdlestone, C. H., & Co., Windsor, Ont.—Tobacco and cigars. 62

- 36 Downie, W., Saaninch, B. C.—Hops. 62

- 37 Moses, D. D., Saaninch, B. C.—Hops. 62

- 38 Wain, N., Saaninch, B. C.—Hops. 62

- 39 Cook, Isaac, Saaninch, B. C.—Hops. 62

- 40 Mann, J. W., Simcoe, Ont.—Grass and turnip seed. 62

- 41 Fuller, S. S., Stratford, Ont.—Flaxseed. 62

## Land Animals.

- 42 Carnell, J. H., St. John, N. B.  
a Stuffed birds and ducks. 62  
b Fur-bearing animals, etc. 62

- 43 Egan, Thomas J., Halifax, Nova Scotia.  
a Six cases Canadian birds. 62  
b One pair caribou. 62  
c Two caribou heads. 62  
d Two moose heads. 62  
e One black bear. 62

- 44 Norvell, G. F., Hamilton, Ont.—Stuffed birds. 62

- 44a Foley, C., Lindsay, Ont.—Stuffed birds. 62

- 45 Loggie, A., & Co., New Westminster, B. C.—Salmon and trout. 62

- 46 Advisory Board of Nova Scotia.—Fishes. 62

## Water Animals, Fish-Culture, and Apparatus.



## Animal and Vegetable Products, Textile Substances.

- 47 Crowe, A. H., Halifax, N. S.—Fishes. 641
- 47<sup>a</sup> McLeod, R.—Medusa head, star fish. 641
- 48 O'Leary, H., Richibucto, N. B.  
<sup>a</sup> Salmon. 641  
<sup>b</sup> Lobsters. 643
- 49 Mack, J. N., Halifax, N. S.—Smoked alewives. 642
- 50 Barber, J., Halifax, N. S.  
<sup>a</sup> Canned mackerel. 642  
<sup>b</sup> Canned lobsters. 643
- 51 Deas, J. S., Fraser River, B. C.—Canned salmon. 642
- 52 Noble, R. B., Richibucto, N. B.  
<sup>a</sup> Mackerel, etc. 642  
<sup>b</sup> Lobster. 643
- 53 Bain, J. D., Restigouche, N. B.  
<sup>a</sup> Mackerel. 642  
<sup>b</sup> Lobsters. 643
- 54 Holbrook & Cummington, New Westminster, B. C.—Canned salmon. 642
- 56 Christian, P., Halifax, N. S.—Canned lobsters. 643
- 57 Geological Survey, British Columbia.—Clam-shells used by Indians. 645
- 58 Erwin & Wisc, British Columbia.—Isinglass. 646
- 59 Pitts, D. H., Halifax, N. S.—Reel for cod-fishing. 647
- Animal and Vegetable Products.**
- 60 Sharp, J. S., St. John, N. B.—Butter. 651
- 61 McLeod, R. E., & Co.—Cheeses. 651
- 62 Harvey, J., & Co., Hamilton, Ont.—Sheep-skins. 652
- 63 Crowe, A. H., Halifax, N. S.—Fish oils. 652
- 64 Netz, Christian.  
<sup>a</sup> Lard. 652  
<sup>b</sup> Pork and sausages. 656
- 65 Hatheway, F. A., St. John, N. B.—Moose and caribou heads. 652
- 66 Barnhill, B. B., St. John, N. B.—Moosehead. 652
- 67 Langley & Co., Victoria, B. C.—Oil. 652
- 68 Loggie, A., & Co., New Westminster, B. C.—Oolachan or pure oil. 652
- 69 Deel, W. H., Toronto, Ont.—Hen's nest. 653
- 70 Walsh, B., Halifax, N. S.—Pork. 656
- 71 Woodrell, W., Halifax, N. S.—Beef. 656
- 72 Belcher, J. W., Halifax, N. S.—Fruits in sugar. 656
- 73 Canadian Meat & Produce Co., Sherbrook, Quebec.—Canned meats. 656
- 74 Bain, J. D., Restigouche, N. B.—Beef and soups. 656
- 75 Graham, John, Sussex, N. B.—Spiced rolled bacon. 656
- 76 Canadian Commission.  
<sup>a</sup> Dried Indian berries. 656  
<sup>b</sup> Indian bread. 661
- 76<sup>a</sup> Guthrie & Hevenor, St. John, N. B.  
<sup>a</sup> Fruit preserves. 656  
<sup>b</sup> Raspberry vinegar. 660
- 77 Mewhort, Jos., Montreal, Quebec.—Self-raising flour. 657
- 78 Parkyn, Jas., Montreal, Quebec.—Flour. 657
- 79 McDougall, John, Bowmanville, Ont.—Flour. 657
- 80 Wadsworth, J. P., Meaford, Ont.—Flour. 657
- 81 King, Joseph G., Port Hope, Ont.—Three samples gilt-edged, patent process flour; three samples gilt-edged flour; three samples patent process flour; three samples flour. 657
- 82 Corn Exchange Association, Toronto, Ont.—Flour. 657
- 83 Weatherston, N., & Co., Toronto, Ont.—Flour and meal. 657
- 84 Charlesworth, M., & Son, Egmondville, Ont.—Flour. 657
- 85 Brodie & Harvie, Montreal, Quebec.—Self-raising flour. 657
- 86 Catelli Bros., Montreal, Quebec.—Vermicelli and macaroni. 658
- 87 Spinnelli, M. R., Montreal, Quebec.—Macaroni and vermicelli. 658
- 88 Troop, O. V., & Co., Mammoth Vinegar Works, St. John, New Brunswick.—Vinegar. The various grades of vinegars from this factory are readily sold for medicinal, pickling, and culinary purposes in the maritime provinces. 660
- 89 Febur, Michel Le, Montreal, Quebec.—Vinegar. 660
- 90 McLeod, McNaughton, & Co., Ales and porter. 660
- 91 Blackwood, R., & Co., Montreal, Quebec.—Champagne, cider, etc. 660
- 92 Croskill, G. H., Halifax, N. S.—Cordials. 660
- 93 Costin, P., Halifax, N. S.—Champagne cider. 660
- 94 Knight, J., Halifax, N. S.—Liquors. 660
- 95 Smith, R., & Co., Brantford, Ont.—Bottled wines. 660
- 96 Canada Wine-growers Association, Toronto, Ont.—Wines and brandies. 660
- 97 Hastings, James, Toronto, Ont.—Wines. 660
- 98 Farrell, A. P., Cayuga, Ont.—Wine. 660
- 99 Wilson, Charles, Toronto, Ont.—Ginger ales. 660
- 100 Waterhouse, Joseph, Chatham, Ont.—Ales and porter. 660
- 101 Labatt, John, London, Ont.—Ales and porter. 660
- 102 Davis, Thos., & Bro., Toronto, Ont.—Ales and porter. 660
- 103 Birely & Co., Hamilton, Ont.—Vinegar. 660
- 104 Casci, V., Toronto, Ont.  
<sup>a</sup> Wines. 660  
<sup>b</sup> Plaster work. 400
- Textile Substances of Vegetable or Animal Origin.**
- 105 Nicol Bros., Belmont, Ont.—Flax. 666
- 106 Stahschmidt & Co., Victoria, B. C.—Wool. 667

## Machines, Implements, Engineering and Administration.

107 Canadian Commission. — Indian  
wool from British Columbia. 667

108 Harvey, J., & Co., Hamilton, Ont.—  
Wool. 667

Machines, Implements, and Processes  
of Manufacture.

109 Richardson, Thos., Fergus, Ont.—  
Plow. 670

110 Acton Plow Co., Acton, Ont.—  
Plow. 670

111 Ross, George, Chatham, Ont.—  
Plows. 670

112 Monroe & Hogan, Seaforth, Ont.—  
—Plow. 670

113 Duperon, Chas., Stratford, Ont.—  
Harrow. 670

114 Gillis, George, Gananoque, Ont.—  
Harrow, cultivator, and harrow and culti-  
vator combined. 670

115 Bell, Charles, Parkhill, Ont.—  
Plow. 670

116 Wilson & Piper, Strathroy, Ont.—  
Combined sulky-harrow and hay-rake. 670

117 Wilkinson, George, Aurora, Ont.—  
Furrow plows, wrought frame and iron  
plows. 670

118 McDonald, A. S., Osgoode, Ont.—  
Cylinder cultivator. 670

119 McLaurin, Edmund, Trafalgar, Ont.—  
—Plow. 670

120 Yeandle, Thomas, Stratford, Ont.—  
Plows. 670

121 Grant, Peter, Clinton, Ont.—Horse-  
power pitchfork. 670

122 Connell Bros., Woodstock, N. B.—  
—Plow. 670

123 Dennis, Rowland, London, Ont.—  
a Plow. 670  
b Potato-digger. 672

124 Dow, John, Gananoque, Ont.—  
Harrow and cultivator. 670

125 Harris, J., & Co., St. John, N. B.—  
a Plows. 670

b Mower, hay-rake, and potato-diggers. 672

c Thresher. 673

d Hay-cutter. 674

126 Watson, John, Ayr, Ont.—  
a Plows, roller. 670

b Horse-power grain-drill, turnip-drill. 671

c Grain-choppers, corn-sheller. 673

d Straw-cutters, root-cutter and pulper. 674

127 Vessot, J. & S., Joliette, Quebec.—  
Combined sower, harrow, and roller. 671

128 Mann, James W., Simcoe, Ont.—  
Turnip-drill. 671

129 Martin, Stephen, Osgoode, Ont.—  
Potato-digger. 672

130 Gray, A. G., St. John, N. B.—  
Mower. 672

131 McKenzie, Wm., Charlottetown, P.  
E. I.—Potato-digger. 672

132 Harris, A., Son, & Co., Brantford,  
Ont.—Mower, reaper, and rake. 672

133 Sawyer, L. D., & Co., Hamilton,  
Ont.—Mower, reaper. 672

134 Green Bros., Waterford, Ont.—  
Single reaper. 672

135 Bawtenheimer, P. M., Hamilton,  
Ont.—Potato-digger. 672

136 Head, Thos., Dundas, Ont.—Po-  
tato-digger. 672

137 Elliott, Thos., Peterboro', Ont.—  
Combined hay-rake and loader. 672

138 Forsyth & Co., Dundas, Ont.—Com-  
bined mower and reaper, single reaper. 672

139 Sharmon & Foster, Stratford, Ont.—  
a Mower and reaper combined. 672

b Thresher and separator. 673

140 Massey Mfg. Co., Newcastle, Ont.—  
a Mowing-machine and horse-rake. 672

b Grain-crusher. 673

141 Sells, Hugh, Vienna, Ont.—Cider-  
mills and presses. 673

142 Armstrong, E. F., Goderich, Ont.—  
Fanning-mill. 673

143 Haggert Bros., Brampton, Ont.—  
Horse-power separator. 673

144 Bricker, Jac., Berlin, Ont.—Thresh-  
ing-separator. 673

145 Champion, A., Arkona, Ont.—  
Thresher and boiler. 673

146 Wilson, Thos., Richmond Hill,  
Ont.—Fanning-mill. 673

147 Gerolamy, Wm. A., Owen Sound,  
Ont.—Fanning-mill. 673

148 Abell, John, Woodbridge, Ont.—  
a Separator with carriers. 673

b Portable engine. 674

149 Anderson, Alex., London, Ont.—  
Straw-cutters and hay-knives. 674

150 Luke & Tolton Bros., Guelph, Ont.—  
—Straw-cutter, etc. 674

151 Maxwell, David, Paris, Ont.—  
Power and hand straw-cutters, root-cut-  
ters, and pulpers. 674

151a James, Jos., Forest, Ont.—Bag-  
holder. 674

152 Ashley & Smith, Belleville, Onta-  
rio.—Manufacturers and sole assignees for  
the dominion of Canada of Fraser's patent  
improved cheese-hoops and gang-press.  
From five to fifteen cheeses may be pressed  
with one screw, each cheese receiving its  
full power; and one man can put ten  
cheeses to press after the hoops are filled  
as quickly as one man with the old press  
can put two cheeses to press. 675

153 Pitts, D. H., Halifax, N. S.—Hori-  
zontal churn. 675

Agricultural Engineering and Admin-  
istration.

154 Strong, J. E., Newtonbrook, Ont.—  
—Farm gate. 680

155 Marcon, W. H., Guelph, Ont.—  
Crushed bones. 681

156 Attwood, A. C., London, Ont.—Bee-  
hive, etc. 683

157 Purdy & Green, Portland, N. B.—  
—Lime. 103

158 Canadian Commission.  
a Tripoli earth from British Columbia. 104

b Head of a Waupitee Indian, Manitoba. 312

159 Borthwick, W., Ottawa, Ont.—  
—Mineral waters. 107

160 Gray, Young, & Sparling, Sea-  
forth, Ont.—Salt. 200

## Agricultural Engineering and Administration.

- |   |  |
|---|--|
| <p>161 International Salt Co., Goderich,<br/>Ont.—Salt. 206</p> <p>162 Coleman &amp; Gowinlock, Seaforth,<br/>Ont.—Salt. 200</p> <p>163 Harrison &amp; Evans, Goderich, Ont.<br/>—Salt. 200</p> <p>164 Rigg, Ben., Stratford, Ont.—Soap.<br/>201</p> <p>165 McKelvey, Jas., St. Catharines.—<br/>Refrigerators. 224</p> <p>166 Canadian Commission.<br/>a Indian yarn from B. C. 235<br/>b Indian blankets from B. C. 237</p> | <p>167 Anderson, Alex., London, Ont.,<br/>Canada.—Bread-knives. 281</p> <p>168 Stephen, Alex., &amp; Son, Halifax,<br/>N. S.<br/>a Brooms. 286<br/>b Pails. 289</p> <p>169 Brazil, Peter B., Barrie, Ont.<br/>a Sleigh. 295<br/>b Snow-plow. 572</p> <p>170 Bruce, Robt., St. Catharines, Ont.<br/>—Tree-pruner. 720</p> |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## FRANCE.

*West of Nave, Columns 3 to 7.)*

## Metallurgy, Mining Engineering, Agricultural Products.

## Minerals, Ores, Stone, Mining Products.

- 1 Laroche, A., Saulxures, Vosges.—Coal. 101
- 2 Asphalt Mining Co., Pyrimont-Seyssel, Ain.—Asphaltum. 101
- 3 Biron & Son, Paris.—Stone staircase and samples of colored Echaillon stone. 102
- 4 Cornu, Eugène, & Co., Paris.—Marble and Algerian onyx. 102
- 5 Marga, Eugene, Paris.—Samples of marble. 102
- 6 Parfony & Lemaire, Paris.—Marble for furniture. 102
- 7 Pont-Ollion, Nicolet, Grenoble, Isere.—Cements. 103
- 8 Thorrand & Co., Grenoble.—Cement. 103
- 9 Soullier & Brunot, Teil, Ardèche.—Hydraulic lime. 103
- 10 Lime, Cement, & Plaster Manufacturing Co., Paris.—Limes, cements, plasters, and bricks. 103
- 11 Hydraulic Lime Stock Co., Montélimar, Drôme.—Lime, cement, and artificial paving blocks. 103
- 12 Holl, Samuel J., Dieppe, Seine-Inférieure.—Chalk. 103
- 13 Pinson, Paris.—Shell, ivory, mother of pearl, and artificial stone. 103
- 14 Pavin de la Farge, L. & E., Viviers, Ardèche.—Hydraulic lime and Portland cement. 103
- 15 Louquety & Co., Boulogne-sur-Mer.—Cements. 103
- 16 Lauzun & Co., Bourg St. Andeol, Ardèche.—Artificial stone pavement, mosaics, granite, and artificial marble. 103
- 17 Mailfert & Mathelin, Chatillon-sur-Seine, Côte d'Or.—Moulding sand for foundries. 104
- 18 Deplanque, jr., Maisons, Alfort, Seine.—Emery in grains and powder. 106
- 19 Roger, Son, & Co., La Ferté-sous-Jouarre, Seine and Marne.—Millstones. 106
- 20 Fauqueux, A., La Ferté-sous-Jouarre, Seine and Marne.—Millstones. 106
- 21 Lithographic Stone Quarry Co., Paris.—Lithographic stone. 106
- 22 Clément, Clément, & Co., Paris.—Diamonds. 106
- 23 Durrachmidt, Lyons.—Emery in grains and powdered. 106
- 24 Bertrand, Jules, & Co., La Ferté-sous-Jouarre, Seine and Marne.—Millstones. 106

- 25 Bailly & Co., La Ferté-sous-Jouarre, Seine and Marne.—Millstones. 106
- 26 Weyl & Co., Paris.—Mineral waters from Aulus Springs. 107

## Metallurgical Products.

- 27 Desmoutis, Quennessen, & Le Brun, Paris.—Platinum. 110
- 28 Chappée, A., Mans, Sarthe.—Iron pipes for water and gas. 111
- 29 Durenne, A., Paris.—Monumental fountain. 111
- 30 Martin, Pierre Emile, Sireuil, Charente.—Iron and steel. 111
- 31 Terrenoire, La Voulte, & Bessegas, Lyons.—Iron and steel castings. 111
- 32 Marseilles Gas Co., Marseilles.—Spiegeleisen iron. 111
- 33 Marquise Foundry and Construction Works, Paris.—Iron pipes and chandeliers. 111
- 34 Secrétan, E., Paris.—Copper. 112

## Mining Engineering.

- 36 Davey, Bickford, Watson, & Co., Rouen.—Safety fuse for mines. 120
- 37 Cosset, Dubrulle, Lille, Nord.—Safety lamps for miners. 120
- 38 Galibert, A., Paris.—Apparatus for breathing amid suffocating gases. 120

## Arboriculture and Forest Products.

- 1 Delmas, Augustin, Toulouse.—Natural woods. 620
- 2 Gouturon, Mezin, Lot-and-Garonne.—Corks. 622

## Pomology.

- 3 Charozé Bros., La Pyramide, Maine-and-Loire.—Fruits. 610

## Agricultural Products.

- 4 Barthe, G., Paris.—Corn. 620
- 5 Dumoutier, Ch., Claville, Eure.—Agricultural products. 620
- 6 Thoreau, E., & Son, Chateau de la Chêze, Maine-and-Loire.—Barley. 620
- 7 Gutmann & Bloch, Paris.—Barley. 620
- 8 Hops and malt. 621
- 8 Foa, Miss J., Paris.—Medicated cigarettes. 621

## Water Animals, Fish Culture, and Apparatus.

- 9 Colin, jr., Nantes.—Preserved fish. 642

## Animal and Vegetable Products.

- 10 Dupland, E., Ville-en-Bois, Loire-Inferieure.—Preserved sardines. 641
- 11 Jacquier & Saupiquet, Nantes.—Sardines in oil. 641
- 12 Maille & Tandean, Paris.—Anchovies in oil. 641
- 13 Maré, C., Nantes.—Sardines. 641
- 14 Peltier & Paillard, Paris.—Sardines in oil. 641
- 15 Philippe & Co., Nantes.—Sardines in oil. 641
- 16 Terrien, Palais, Belle-Ile-en-Mer.—Sardines in oil. 641
- 17 Caillebotte & Dumagnou, Paris.—Sardines and pickled fish. 642
- 18 Dufour, A., & Co., Bordeaux.—Sardines. 642
- 19 Peltier & Paillard, Paris.—Sardines in oil. 642
- 20 Clement & Co., Paris.—Pearls. 645

## Animal and Vegetable Products.

- 21 Coupiac, E., Roquefort Cheese-Factory, Roquefort, Aveyron.—Cheese. 651
- 22 Bageau, H., Paris.—Waterproof glue for leather. 652
- 23 Corbel, Eug., & Co., Nantes.—Leather. 652
- 24 Clavé, Bertrand, Coulommiers, Seine-and-Marne.—Leather. 652
- 25 Burel, J., Paris.—Peltry; kid-skins. 652
- 26 Bayvet Bros., Paris.—Morocco, sheep, calf, goat, and kid skins. 652
- 27 Basset & Co., Paris.—Kid for shoes. 652
- 28 Allain, Jules, Paris.—Kid for shoes. 652
- 29 Leven, M., senior & junior, Paris.—Calf-skin. 652
- 30 Portier, Beaulieu, Paris.—Leather for furniture. 652
- 31 Tréfosse & Co., Chaumont, Haute-Marne.—Leather and dyes for leather. 652
- 32 Sueur, F., jr., Paris.—Leather. 652
- 33 Sorro Bros., Milan, Aveyron.—Calf-skin. 652
- 34 COLLECTIVE EXHIBIT OF THE LEATHER MANUFACTURERS OF SAINT-SAËNS, SEINE INFÉRIEURE.—LEATHER. 652
- Lefebvre, Felix.
- Lecourtois, Arthur.
- Lemonnier, Jules.
- Sergent, Edmond.
- Fache-Havé & Brother.
- Frigot, Emile.
- Lefebvre, Florentin.
- Binet, Hippolyte.
- Lenormand, Emile.
- Morisset, Mrs.
- Blot, Eugène.
- Dumaniil, Paul.
- 35 Revillon Bros., Paris.—Peltries. 652
- 36 Daubin & Co., Paris.—Lard. 652
- 37 Duchesne Bros., Paris.—Morocco leather. 652
- 38 Peltier & Paillard, Paris.—Preserved meats. 656
- 39 Passion, Marc, Paris.—Preserved food. 656
- 40 Ségur & Obier, Périgueux, Dordogne.—Preserved food and paté de foie gras. 656
- 41 Vicat, J. H., Paris.—Mustard and pickles. 656
- 42 Terrien, senior, Palais, Belle-Ile-en-Mer.—Preserved food. 656
- 43 Maré, C., Nantes.—Green peas. 656
- 44 Lenoir, A., Paris.—Preserved game, poultry, etc.; patés. 656
- 45 Lecourt, Francois, Paris.—Preserved food. 656
- 46 Landrin, Augustin, Paris.—Preserved fruits and vegetables. 656
- 47 Lamarche & Veillon, Paris.—Preserved game and patés de foie gras. 656
- 48 Jacquier & Saupiquet, Nantes.—Preserved food. 656
- 49 Henry, Louis, Paris.—Patés de foie gras. 656
- 50 Groult, jr., Paris.—Conserves. 656
- 51 Tivollier, Auguste, Toulouse.—Paté de foie gras. 656
- 52 Fau, J., Bordeaux.—Prunes. 656
- 53 Escoffier, J., Nice.—Preserved fruits. 656
- 55 Dronne, L. F., Paris.—Paté de foie gras and preserved meats. 656
- 56 Dione, A. C., Paris.—Preserved food. 656
- 57 Lamarche & Veillon, Paris.—Paté de foie gras. 656
- 58 Deriviere, Julien, Paris.—Preserved food. 656
- 59 Dardelle & Co., Paris.—Preserved and dried vegetables. 656
- 60 Cormier & Véron, Paris.—Preserved food. 656
- 61 Colin, Joseph, Nantes.—Preserved food. 656
- 62 Chevallier, Appert, Paris.—Preserved food. 656
- 63 Caillebotte & Dumagnou, Paris.—Preserves. 656
- 64 Boyer, P., & Co., Gignac, Hérault.—Truffles, capers, and olives. 656
- 65 Bornibus, Alexandre, Paris.—Mustard and pickles. 656
- 66 Bonfils Bros. & Co., Paris.—Preserved truffles. 656
- 67 Philippe & Co., Nantes.—Preserved food. 656
- 68 Fiton & Nouvialle, Bordeaux.
- a Preserved food and fruits. 656
- b Liquors. 660
- 68a Barthe, G., Paris.—Flour. 657
- 69 Ecorcheville & Legrand, Paris.
- a Preserved fruits. 656
- b Confectionery. 661
- 70 Dufour, A., & Co., Bordeaux.
- a Prunes. 656
- b Wines. 660

## Vegetable Products, Wines, Liquors.

- |   |     |  |     |
|---|-----|--|-----|
| 71 Dandicolle & Gaudin, Bordeaux.       |     | 103 Roederer, Théophile, & Co., Rheims       |     |
| a Preserved food.                       | 656 | —Champagne wines.                            | 656 |
| b Wines and liquors.                    | 660 | 104 Rivière, Gardrat, & Co., Cognac.—        |     |
| 72 Rousseau Bros., Paris.               |     | Brandies.                                    | 660 |
| a Preserved fruits.                     | 656 | 105 Ricaumont, de, & Co., Libourne.—         |     |
| b Liquors.                              | 660 | Wines.                                       | 660 |
| 73 Maille & Tandeau, Paris.             |     | 106 Sabatier-Granier & Son, Manduel,         |     |
| a Mustard, pickles, and anchovies in    |     | Gard.—Wines and brandies.                    | 660 |
| oil.                                    | 656 | 107 Rouyer, Guillet, & Co., Saintes,         |     |
| b Vinegar.                              | 660 | Charente Inferieur.—Brandies.                | 660 |
| 74 Lesage & Pagnard, Paris.             |     | 108 Roussillon, J., & Co., Epernay,          |     |
| a Preserves.                            | 656 | Marne.—Champagne wines.                      | 660 |
| b Confectionery.                        | 661 | 109 Fontaine, Sarget de la, Bordeaux.—       |     |
| 75 Louit Bros. & Co., Bordeaux.         |     | Wines.                                       | 660 |
| a Preserves and mustard.                | 656 | 110 Soudée, Paris.—Wines and brandies.       | 660 |
| b Vinegar.                              | 660 | 111 Tarbouriech, Louis, Cette, Hérault.      |     |
| c Chocolates.                           | 661 | —Wines.                                      | 660 |
| 76 Mauprivez, A., Paris.—Tapioca.       | 658 | 112 Marchand Bros., Paris.—Liquors.          | 660 |
| 77 Say, C., Paris.—Refined Sugar.       | 659 | 113 Lossy & Co., Reims.—Champagne            |     |
| 78 Déjardin, E., Paris.—Orange          |     | wines.                                       | 660 |
| syrup.                                  | 659 | 114 Lentilhac, de, Ballargeaux, St.          |     |
| 79 Antheaume & Sons, Bourget-les-       |     | Aulaye.—Wines.                               | 660 |
| Paris, Seine.                           |     | 115 Launay, de, & Co., Paris.—Champagne      |     |
| a Glucose.                              | 659 | wines.                                       | 660 |
| b Caramels.                             | 661 | 116 Larronde Brothers, Bordeaux.—            |     |
| 80 Lefèvre & Rémondet, Savigny-les-     |     | Wines and brandies.                          | 660 |
| Beaune, Côte d'Or.—Sparkling            |     | 117 Lamart, A., Beaumets-les-Loges,          |     |
| wines.                                  | 660 | Pas-de-Calais.—Liquors.                      | 660 |
| 81 Combiér, J., Saumur, Maine-and-      |     | 118 Labrunie, P. A., Bordeaux.—              |     |
| Loire.—Liquors.                         | 660 | Wines.                                       | 660 |
| 82 Chenu, Laffitte, & Co., Bordeaux.—   |     | 119 Javersac, Viremondoy, & Co., Pont-       |     |
| Wines.                                  | 660 | de-Bordes, Lot-and-Garonne.—Wines and        |     |
| 83 Brizard & Roger, Bordeaux.—          |     | brandies.                                    | 660 |
| Liquors.                                | 660 | 120 Irroy, Ernest, & Co., Reims.—            |     |
| 84 Passier, A., Sautenay, Cote d'Or.—   |     | Champagne wines.                             | 660 |
| Wines.                                  | 660 | 121 Guilhou, A., senior, Bordeaux.—          |     |
| 85 Otard, Dupuy, & Co., Cognac.—        |     | Wines.                                       | 660 |
| Brandies.                               | 660 | 122 Guichard-Potheret & Son, Chalons-        |     |
| 86 Pinet, Castillon, & Co., Cognac.—    |     | sur-Saone.—Wines.                            | 660 |
| Brandies.                               | 660 | 123 Hivert, Pellevoisin, & Godet, La         |     |
| 87 Perrier, J., & Co., Chalons-sur-     |     | Rochelle.—Brandies.                          | 660 |
| Marne.—Champagne wines.                 | 660 | 124 Anthoine, Paris.—Wines.                  | 660 |
| 88 Montigny, de, & Co., Reims.—         |     | 124a Benoit, Charles, Reims.—Champagne       |     |
| Champagne wines.                        | 660 | wines.                                       | 660 |
| 89 Montheuil, Franc, senior, Bordeaux.— |     | 125 Barral, J. L., Paris.—Wines.             | 660 |
| Wines.                                  | 660 | 126 Beaucourt, Fortuné, Margaux-             |     |
| 90 Montebello, Alfred de, & Co.,        |     | Medoc, Gironde.—Wines.                       | 660 |
| Mareuil-sur-Ay, Marne.—Champagne        |     | 127 Bellot, Jules, & Co., Cognac, Charente.— |     |
| wines.                                  | 660 | Brandy.                                      | 660 |
| 91 Meukow, A. C., Cognac.—Brandies.     | 660 | 128 Beuverand, de, & Poligny, de,            |     |
| 92 Merman, G., Bordeaux.—Wines.         | 660 | Chassagne, Côte d'Or.—Wines.                 | 660 |
| 93 Merman & Maitre, Bordeaux.—          |     | 129 Bollinger, J., Ay-Champagne,             |     |
| Wines.                                  | 660 | Marne.—Champagne wine.                       | 660 |
| 94 Merman, Jules, & Co., Bordeaux.—     |     | 130 Bontou, jr., Bordeaux.—Wines.            | 660 |
| Wines.                                  | 660 | 131 Boule, E., Bordeaux.—Wines.              | 660 |
| 95 Mayer, Albert, Paris.—Liquors.       | 660 | 132 Bourgoin-Jamain, jr., Beaune,            |     |
| 96 Mercier, Eug., Epernay.—Champagne    |     | Côte d'Or.—Wines.                            | 660 |
| wines.                                  | 660 | 133 Bouteilleau & Co., Barbesieux near       |     |
| 97 Reignard, Paris.—Wines.              | 660 | Cognac.—Brandies.                            | 660 |
| 98 Promis, Justin, Bordeaux.—Wines      |     | 134 Brugallieres, Etienne, Floressas,        |     |
| and brandies.                           | 660 | Lot.—Wines.                                  | 660 |
| 99 Poligny Society of Agriculture,      |     | 135 Chaboseau & Payen, Levallois-            |     |
| Science, & Art, Poligny, Jura.—Wines.   | 660 | Perrét, Seine.—Liquor.                       | 660 |
| 100 Poitevin, Ch., & Co., Bordeaux.—    |     | 136 Chateau d'Issan, Roy, G., Mar-           |     |
| Wines.                                  | 660 | gaux, Gironde.—Wines.                        | 660 |
| 101 Roullé, E., Bordeaux.—Wines.        | 660 |  |     |
| 102 Rojat, Jules, Nîmes, Gard.—White    |     |  |     |
| wine vinegar.                           | 660 |  |     |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Wines, Liquors, Vegetable Products, Agricultural Machines.

- 137 Chiappella, Jérôme, Bordeaux.—Wines. 660
- 138 Clavelle, Jules, Bordeaux.—Wines. 660
- 139 Clerc, J. B., Bordeaux.—Wines. 660
- 140 Collin, Ad., Châlons-sur-Marne.—Champagne wines. 660
- 141 Coudert, G., & Son, Limoges, Haute-Vienne.—Brandies. 660
- 142 Cunliffe, Dobson, & Co., Bordeaux.—Wines. 660
- 143 Curlier Bros. & Co., Paris.—Brandies. 660
- 144 Cusenier, E., & Co., Ornans, near Pontarlier.—Liquors. 660
- 145 Delizy & Doistau, jr., Pantin, Seine.—Liquors. 660
- 146 Thoreau, E., & Son, Chateau de la Chêze, near Saumur.—Champagne and red wines. 660
- 147 Tivet, B., Bordeaux.—Liquors and bitters. 660
- 148 Agricultural Union, Chateau-neuf, Charente.—Brandies. 660
- 149 Gourry & Co., Cognac.—Brandies. 660
- 150 Goerg, I., & Co., Châlons-sur-Marne.—Champagne wines. 660
- 151 Giojuzza & Giobertini, Paris.—Wines. 660
- 152 Gerin, E., Saint Jean d'Angéley, Charente.—Brandy. 660
- 153 Garros, J. L., Bordeaux.—Wines. 660
- 154 Garnier, P., Noyon, Oise.—Liquors. 660
- 155 Gadrat, D. G., & Co., Cognac.—Brandies. 660
- 156 Frois, Leo, & Co., Bordeaux.—Wines. 660
- 157 Fournier, Jules, Epernay, Marne.—Champagne wines. 660
- 158 Fournier, A., Chateau de Figeac, Gironde.—Wines. 660
- 159 Fouches, L., & Co., Cognac.—Brandies and liquors. 660
- 160 Dessandier, F., & Co., Jarnac-Cognac.—Brandies. 660
- 161 Detrie-Grandjean, Saint Loup-sur-Semouse, Haute Saone.—Kirschwasser. 660
- 162 Ditley, E., Paris.—Wines. 660
- 163 Dolin, Mrs., Chambéry, Haute Savoy.—Vermouth. 660
- 164 Druelle, Reims.—Champagne wines. 660
- 165 Dubois, E., & Co., Saint Jean d'Angéley, near Cognac.—Brandies. 660
- 166 Duquênél, Paris.—Wines and brandies. 660
- 167 Duret, Jules, & Co., Cognac.—Brandies. 660
- 168 Durosier, M., & Co., Cognac.—Liquors. 660
- 169 Laplante, Edard de, Guyotville, near Algeria.—Wines. 660
- 170 Faure, J., & Co., Cognac.—Brandies. 660
- 171 Faurie, J., sr., Narbonne.—Wines. 660
- 172 Ferret, Bros., & Co., Macon.—Wines. 660
- 173 Fil, Francois, Narbonne, Ande.—Wines. 660
- 174 Fisse, Thirion, & Co., Reims.—Champagne wints. 660
- 175 Seignouret Bros.—Bordeaux.  
a Wines and brandies. 660  
b Olive oil. 662
- 176 Mestrezat & Co., Bordeaux.  
a Wines and brandies. 660  
b Olive oil. 662
- 177 Reinhardt, L., & Co., Paris.—Bonbons. 661
- 178 Biardot, Alphonse, Paris.—Confectionery. 661
- 179 Chenu, P., Paris.—Confectionery. 661
- 180 Combet, Joseph, Paris.—Confectionery. 661
- 181 Ménier, Paris.—Chocolates. 661
- 182 Nègre, Joseph, Grasse, Alpes Maritimes.—Confectionery. 661
- 183 Lombart, Paris.—Chocolates. 661
- 184 Marge, jr., Lyons.—Patés. 661
- 185 Mottet, J., & Co., Marseilles.—Olive oil. 662
- 185a Chudaca, Léon, Alger.—Oil. 662
- 186 Plagniol, James de, Marseilles.—Olive oil. 662
- Textile Substances of Vegetable or Animal Origin.**
- 187 Chabert, J., & Co., Chomérac, Ardèche.—Raw silk. 668
- 188 Boudon, Louis, St. Jean-du-Gard, Gard.—Raw silk. 668
- 189 Arlès, Dufour, Lyons.—Raw silk. 668
- 190 Thomas, F., Pont des Charettes, Gard.—Cocoons and raw silk. 668
- 191 Pellet, A. P., St. Jean-du-Gard, Gard.—Raw silk. 668
- Machines, Implements, and Processes of Manufacture.**
- 192 Rabache, A., Clunay-sur-Odon, Calvados.—Double plow. 670
- 193 Couture, Paris.—Stripping machines for textiles. 673
- 194 Druelle, Reims.—Corking apparatus for champagne wines. 673
- 195 Dénay, Louis, Paris.—Cylinder press for sugar. 673
- 196 Maurice & Guenin, Epernay.—Corking machines. 673
- 197 Mabilie Bros., Amboise, Indre and Loire.—Wine and oil presses. 673
- 198 Logette, Ay, Marne.—Clasps for bottles, and machines for using them. 673
- 199 Gervais, E., Bordeaux.—Corking machines. 673
- 200 Fréal, Epernay, Marne.—Machines for filling bottles. 673
- 200a Dubois, Emile, St. Jean d'Angéley. Botling machine. 673
- 201 Fisse, Thirion, & Co., Reims.—Iron clasps and botling apparatus. 673

## Agricultural Machines, Engineering.

- 202 Mercier, Eug., Epernay.—Apparatus for vine-culture and for the manufacture of sparkling wines. 673
- 203 Malligand, Ed., jr., Paris.—Alcohol tester. 673
- 204 Pernollet, Jh., Paris.—Sieves, sorters, and root knives. 673
- 205 Tricourt, A., Reims.—Wine manufacturing machines. 673
- 206 Chenaillier, Paris.—Evaporator. 673
- 207 Cicile, Larbre, Reims, Marne.—Machines for cleaning bottles. 673
- 208 Dornon, L., Lyons.—Gauzes for bolting-rooms and sieves. 674
- 209 Perard, V., Paris.—Sheep-shearing machine. 674
- 210 Fauqueux, A., La Ferté-Sous-Jouarre, Seine and Marne.—Millstones. 674
- 211 Durvie, Ivry-la-Bataille, Eure.—Mechanical kneading-trough. 674
- 212 Scheidecker, Ch., Paris.—Shearing machines. 674
- 213 Roger, jr., & Co., La Ferté-Sous-Jouarre, Seine and Marne.—Millstones. 674.
- 214 Sensfelder, Arcueil, Seine.—Shearing machines. 674

- 215 Aubin & Baron, Paris.—Millstones. 674
- 216 Bailly & Co., La Ferté-Sous-Jouarre, Seine and Marne.—Millstones. 674
- 217 Bertrand, J., & Co., La Ferté-Sous-Jouarre.—Millstones. 674

## Agricultural, Engineering, and Administration.

- 218 Coignet, senior & junior, & Co., Paris.—Manure. 681
- 219 Midi Phosphate Manufacturing Co., Paris.—Phosphate of lime. 681
- 220 Jacquand, senior & junior, Lyons.—Animal charcoal, phosphates, etc. 681
- 221 Solfatara de Pozzuoli Manufacturing Co., Paris.—Artificial manure. 681
- 222 Sensfelder, Arcueil, Seine.—Artificial manure. 681
- 223 Tancrede Bros., Paris.—Animal charcoal. 681
- 224 Desfeux, Ph., Paris.—Models of agricultural sheds. 683

- 225 Brot, Leopold, Paris.  
 a Furniture and mirrors with double shutters and triple front. 217  
 b Mirrors with gilt frames. 219

For classes of exhibits, indicated by numbers at end of entries, see Classification pp. 12-14.



## GERMANY.

(West of Nave, Columns 1 to 4.)

## Forest, Agricultural, Vegetable, Animal Products.

## Arboriculture and Forest Products.

- 1 Körper & Co., Mannheim.—Resinous products in a manufactured state. 603

## Agricultural Products.

- 1a Aly, August, Hamburg.—Barley, oats, grits, buckwheat, etc. 620  
 2 Noll, Joh. Balth., Giessen.—Cigars. 623  
 3 Grosskopf, L., Koenigsberg.—Cigarettes. 623  
 4 Eckstein, A. M., & Sons, Göttingen.—Tobacco and cigarettes. 623  
 5 Gaus, August, Baden-Baden.—Tobacco and cigarettes. 623  
 6 Landfried, P. J., Rauenburg.—Cigars. 623  
 7 Schersinger, W., Stollhofen.—Tobacco and cigarettes. 623  
 8 Lotsbeck Bros., Lehr.—Snuff and tobacco. 623  
 9 Naumann, L., Dresden.—Spices. 623  
 10 Muller, A., Dresden.—Cigarettes. 623

## Animal and Vegetable Products.

- 3 Körper & Co., Mannheim.—Grease and oil. 652  
 6 Dessauer, A., Aschaffenburg.—Parchent glue. 652  
 7 Winter, Fr., Offenbach-on-Main.—Glue. 652  
 1 Leipzig Malt Factory, Schkeuditz, near Leipzig.—Malt. 656  
 2 Moskopf, Th., Fahr, near Neuwed.—Mustard. 656  
 4 Naumann, L., Dresden.—Extracts, essences, etc. 656  
 5 Schörke, A., Gorlitz.—Grape sugar, assorted syrups. 659

## COLLECTIVE EXHIBIT OF GERMAN WINES. 660

- 3 Altenkirch, F., Lorch.  
 3 Dahlen, J. F. J., Lorch.  
 1 Germersheimer, Jac., Lorch.  
 3 Dahlen, F. K., Lorch.  
 1 Travers, Franz, Lorch.  
 1 Wittemann, Peter, Lorch.  
 1 Fendel, H. J., Lorch.  
 1 Jung, Joh. Ant., Assmanshausen.  
 1 Brück, Erwin, Assmanshausen.  
 1 Grün, Wilh., Assmanshausen.  
 1 Kerber, Pet. Jos., Assmanshausen.  
 1 Aumüller, Jac., Rüdeshheim.  
 1 Brandmüller, J. B., Rüdeshheim.  
 1 Dietrich & Co., Rüdeshheim.

- 44 Diltthey, Sahl, & Co., Rüdeshheim.  
 45 Ehrhardt, C., Rüdeshheim.  
 46 Ehrhardt, J., Rüdeshheim.  
 48 Jung, J. J., Rüdeshheim.  
 49 Jung & Co., Rüdeshheim.  
 50 Krass, J. A., Rüdeshheim.  
 51 Meuschel, J. W., sr., Rüdeshheim.  
 52 Schulz & Reuter, Rüdeshheim.  
 53 Winkel & Rothenbach, Rüdeshheim.  
 54 Burgeff, N., Geisenheim.  
 55 Höhl Bros., Geisenheim.  
 56 Lade, Fritz, Geisenheim.  
 57 Quitman, A., Geisenheim.  
 58 Rothe & Thorndike, Geisenheim.  
 59 Metternich, Prince von, Johannisberg.  
 60 Forst, J., Johannisberg.  
 61 Klein, Joh., Johannisberg.  
 61a Germont, L. F., Winkel.  
 62 Müller, Gottl., Winkel.  
 63 Cunibert, Baron von, Oestrich.  
 64 Peetz, Ernst, Oestrich.  
 65 Rasch, Oestrich.  
 66 Steinheimer, C. J. B., Oestrich.  
 68 Lauer & Krämer, Eltville.  
 69 Nilkens, A., Eltville.  
 70 Preusel & Bachmann, Eltville.  
 72 Schmidt & Kett, Eltville.  
 73 Kindlinger, V., Neudorf.  
 74 König, J. B., Rauenthal.  
 75 Siegfried, Rauenthal.  
 76 Rosenstein, B., Wiesbaden.  
 77 Zais, Wilhelm, Wiesbaden.  
 78 Diener, H., Hochheim.  
 80 Feist Bros. & Sons, Frankfort-on-Main.  
 81 Kehrmann, Fr., Coblenz.  
 82 Buhl, F. P., Deidesheim.  
 82a Jordan, L. A., Deidesheim.  
 82b Schellhorn, Walbillich.  
 83 Feis, Louis, Deidesheim.  
 84 Eckel Bros., Deidesheim.  
 85 Seyler, Fr., Deidesheim.  
 86 Frölich, F. A., Edenkoben.  
 87 Vornberger, J. M., Würzburg.  
 87a Labroise Bros., Neustadt-on-Hardt.  
 88 Lang, F. J., Würzburg.  
 89 Oppmann, J., Würzburg.  
 91 Valckenberg, P. J., Worms.  
 92 Langenbach, J., & Sons, Worms.  
 93 Bach, A. H., Mayence.  
 95 Dreydelsohn & Co., Mayence.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Wines, Textile Substances, Machines, Implements.

- 95a Saarbach, E., & Co., Mayence.  
 96 Jäger & Son, Rüdesheim.  
 97 Meyer & Coblenz, Bingen.  
 98 Orb & Weiss, Westhofen.  
 99 Herbster, J., Sulzburg.  
 100 Durlacher, S., & Sons, Kippenheim.  
 101 Schütt, A., Bühl.  
 102 Rössler, A., Neuweiler.  
 103 Brogsitter, P. F., Ahrweiler.  
 103a Kessler, C. E., & Co., Esslingen.

- 104 Häusler, C. S., Hirschberg, Silesia.—Wine and cider. 660  
 105 Rhenish Sparkling Wine Co., Schierstein.—Wine. 660  
 106 Henkell & Co., Mayence.—Wine. 660  
 107 Lindecke, A. G., Magdeburg.—Wines. 660

- 107a Wetterhahn, G., Mayence.—Wines. 660  
 108 Bäcker & Fier, Treves.—Liqueurs and brandies. 660  
 109 Behrensen, Th., Kiel.—Wines and brandies. 660

- 10 Boyens, P. W., Tönning.—Liqueurs and spirits. 660

- 111 Brumby, G., Luckau.—Bitters. 660  
 112 Dammann, L., & Cordes, Thorn.—Spirits, bitters, essences, etc. 660

- 113 Hoffmann, M. & J., Pfalzberg.—Liqueurs. 660

- 114 Kadach, J., Berlin.—Bitters and cherry-juice. 660

- 115 Keiler, J. S., Dantzic.—Liqueurs. 660

- 116 Landauer & Macholl, Heilbronn.—Liqueurs. 660

- 117 Stein, G. & L., Offenburg.—Liqueurs. 660

- 118 Stibbe, H., Cologne.—Liqueurs and essences. 660

- 119 Underberg-Albrecht, H., Rheineberg.—Bitters. 660

- 120 Drouven, Jac., & Co., Coblenz.—Liqueurs, arrack punch-syrup. 660

- 121 Gilka, J. A., Berlin.—Liqueurs and spirits. 660

- 122 Lehment, Fr. & C., Kiel.—Liqueurs and spirits. 660

- 123 Köpp, Th., & Son, Wesel.—Spirit of vinegar and extracts. 660

- 24 Ulex, G. F., successors, Neuhausen-on-the-Oste.—Bitters. 660

- 125 Kantorowicz, H., Posen.—Liqueurs and fruit juices. 660

- 126 Lazar Brothers, Königsberg, Prussia.—Fruit juices. 660

- 127 Naumann, Fr., Delitzsch.—Liqueurs and fruit juices. 660

- 128 Bernhardt, A., Breslau.—Essences and liquors. 660

- 129 Schneider & Schorn, Magdeburg.—Essence of Jamaica rum. 660

- 130 Buck Bros., Lübeck.—Vinegar. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 15-17

- 131 Stengel, W., Leipzig.—Potato brandy. 660

- 132 Meyer, Edward, Stadthagen.—Herb-bitters. 660

- 133 Ackermann, Louis, Berlin.—Liqueurs. 660

- 133a Kirchner, A., & Co., Dendeshagen.—Liquors. 660

- 134 Wiedenbrug, H. T., Barmbeck.—Liqueurs. 660

### COLLECTIVE EXHIBIT OF BAVARIAN HOPS, BEER, AND LITERATURE RELATING THERETO.

- 135 Dreifuss & Binswanger, Nuremberg. 660

- 136 Sahlmann Bros., Fürth. 660

- 137 City Council of Spalt. 660

- 138 Carl, J., Nuremberg. 660

- 139 Homann, C., Nuremberg. 660

- 140 Bottinger, H. F., Würzburg. 660

- 141 Böttteville, Baron von Merzig. 660

- 142 Geisel, L., Neustadt-on-the-Rhine. 660

- 143 Paschorr Brewery, Munich. 660

- 144 Baron von Thüngen Brewery, Weissenbach. 660

- 145 Weltz, H., Speier. 660

- 146 Bavarian Joint-Stock Brewery, Aschaffenburg.—Beer. 660

- 146a Sick, Chr., Speier.—Beer. 660

- 147 Dortmund Brewery, Aix-la-Chapelle.—Beer. 660

- 148 Friedrichshöhe Joint-stock Brewery, Berlin.—Beer. 660

- 149 Hildebrand, J., Pfungstadt.—Beer. 660

- 150 Overbeck, Peter, Dortmund.—Beer. 660

- 152 Berlin Brewing Co., Tivoli, Berlin.—Beer. 660

- 152a Roeper, J. F., Neuwed.—Macaroni, vermicelli, tapioca, etc. 660

- 152b Stollwerk Bros., Cologne.—Macaroni, etc. 660

### Textile Substances of Vegetable and Animal Origin.

- 154 Mens, R. von, Carlsdorf, Saxony.—Merino wool. 660

- 155 Stein, H., & Co., Frankfurt.—Main.—Spun horse-hair. 660

### Machines, Implements and Processes of Manufacture.

- 156 Mayer & Co., Kalk, near Cologne.—Winnowing and sorting machine. 660

- 157 Royal Wurtemberg Furm Friedrichsthal.—Scythes, choppers, etc. 660

- 158 Joacks & Behrens, Lubeck.—Millstones of a set of millstones. 660

### Agriculture Engineering and Administration.

- 161 Raumer, C. von, Kunnersdorf, Prussia.—Works and models relating to drainage and irrigation. 660

## AUSTRIA.

(West of West Aisle, Columns 1 to 4.)

## Forest, Agricultural, Animal and Vegetable Products.

## Arboriculture and Forest Products.

- 1 Weissmann, David, Adlersberg, & Isaac Leib, Perehinsko, Gallicia.—Sounding-board wood. 600  
 2 Frankl, I. G. & L., Vienna.—Austrian timber for furniture manufacturers. 600

## Pomology

- 4 Zierotin, Countess Gabriel von, Charles Pohl, chief gardener, Blanda, Moravia.—Gooseberry and currant bushes, two different fruits growing on the same stem. 610  
 6 Markó & Weyden, Budapest.—Turkish prunes. 611

## Agricultural Products.

- 7 Lyka, Demeter, Pásmánd, Hungary.—Wheat. 620  
 8 Solnitsky & Mittler, Brunn. 620  
 a Malt and barley. 620  
 b Pulses. 621  
 9 Gogl, Dr., jr., Zeno, Krems.—Mustard. 623  
 10 Chleborad, Franz, Ladislav, Mraclitz.—Hops. 623  
 12 Tanzer Bros., Prague.—Hops. 623  
 13 Schwarz & Sons, Benjamin, Auscha, Bohemia.—Hops. 623  
 14 Schary, Johann Michael, Prague.—Hops. 623

## Water Animals, Fish Culture and Apparatus.

- 18 Topich, Antonio, Lissa, Dalmatia.—Preserved fish. 641

## Animal and Vegetable Products.

- 9 Kreitner & Sons, David, Hohenbruck, Bohemia.—Leather. 652  
 10 Ieleinek, Adolph, Lieben, Bohemia.—Glove leather. 652  
 12 Janesch, Edward, Klagenfurt, Karnten.—Leather. 652  
 13 Hoffman, I. and S., Klagenfurt, Karnten.—Leather. 652  
 4 Foges, I., Gaudenzdorf, near Vienna.—Leather, calf and goat skins. 652  
 5 Eckstein, H. M., Lieben.—Kid leather. 652  
 6 Cernstein, Anton V., Pardubitz, Bohemia.—Cow leather and calf skin. 652  
 7 Breuer, Miromil, Elbeteintz, Bohemia.—Patent leather. 652  
 8 Suesse, A. H., & Sons, Vienna.—Leather. 652

- 31 Schmitt, Franz, Rehberg, near Krems.—Leather. 652  
 32 Schmalzl, George, Gaudenzdorf, near Vienna.—Leather, skins. 652  
 33 Neuner, Christof, Klagenfurt and Trieste.—Leather. 652  
 34 Mehlschmidt, Franz, Prague.—Kid leather. 652  
 34a Nachtmann, Jacob, Tannwald. 654  
 a Honey. 654  
 b Raspberry syrup. 659  
 c Wine and liquors. 660  
 36 Tschurtschenthaler, Alois, Botzen.—Conserved and dried fruits. 656  
 37 Sandpichler, Leopold, Gorz.—Candied fruit. 656  
 37a Gfall, Josef Anton, Innsbruck.—Condensed meat and milk. 656  
 38 Kaufmann, M., Brunn.—Moravian malt. 657  
 39 Solnitsky & Mittler, Brunn. 657  
 a Barley. 657  
 b Malt. 660  
 41 Rosenthal, I., Vienna.—Wheat, wheaten flour. 657  
 42 Chiossa, Luigi, Cervignano, near Trieste.—Maize products. 658  
 43 Frizzi, Luigi, Trient.—Wine. 660  
 45 Auchmann, F., Marburg, Styria.—Champagne. 660  
 48 Achleb, Josef, The Farms, Kvasneil.—Liquor. 660  
 47 Abeles, Heinrich, Vienna.—Wine. 660  
 48 Magazzin, Matteo, Zara.—Liquors. 660  
 49 Luxardo, Girolamo, Zara, Dalmatia.—Liquors. 660  
 51 Lord & Co., F., Vienna.—Liquor. 660  
 53 Siebenbürger Wine Association, Klausenburg.—Wines. 660  
 54 Cosmacendi, Anton, Zara.—Liquors. 660  
 55 Mumelter, Alois, Bozen.—Tyrol wines. 660  
 56 Kriehuber, Alois Edler von, Marburg, Styria.—Wine. 660  
 57 Königstädtler Bros., Neusatz, Hungary.—Spirit alcohol. 660  
 58 Ganz, Joseph, Dornberg, near Gorz.—Wine. 660  
 59 Fischer, Johann, jr., & Franz Hubert, Presburg, Hungary.—Champagne. 660  
 60 Dreher, Anton, Kleinschwechat, near Vienna.—Beer. 660  
 61 Dalbello, Antonio, Spalato, Dalmatia.—Liquor. 660  
 62 Brewery Administration, Budweis, Bohemia.—Beer. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products, Textiles, Implements.

- 64 Borhegyi Bros., Gaya, Moravia.—Wine. 660
- 65 Wretzl, Michael, Marburg, Styria.—Wine. 660
- 66 A. Schwartz's Successors, Edward & Emmerich Grossinger, Vienna.—Wine. 660
- 67 Seassler, Moritz & Leopold, Tyrnau, Hungary.—Malt. 660
- 68 Schnabel, Julius, Orávitsa, Hungary.—Slivovitz brandy. 660
- 69 Schenkel, August, Gut Lukaufen, near Luttenberg.—Wine. 660
- 70 Scarizza Giovanni, Spalato, Dalmatia.—Liquors. 660
- 70a Stampalia, Tommaso, Zard.—Maraschino. 660
- 71 Romer & Son, I., Vienna.—Wine. 660
- 72 Reiser, Dr. Othmar, Vienna.—Wine. 660
- 74 Prima Societa Enologica Dalmatia, Spalato, Dalmatia.—Wine. 660
- 75 Pokorny, Franz, Agram, Croatia.—Fruit distillery, wine. 660
- 76 Perko, Francis, Marburg, Styria.—Wine. 660
- 77 Nosiczka, L. C., & W. Umgelter, Brunn.—Malt. 660
- 78 Mittler & Co., Brunn.—Malt. 660
- 79 Strakosch, Ignaz, Gross Seelovitz, Moravia.—Liquor essences. 660
- 80 Neuman & Sons, Emanuel, Waitzen, Hungary.—Vinegar essences. 660
- 81 Spreng, Fridolin, Graz.—Biscuits. 661
- 82 Brichta, Jacob, Trencsin, Hungary.—Juniper berries and oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

(N. B.—Other Austrian Exhibits in this Department are installed in the Main Building, and catalogued in that volume.)

## Textile Substances of Vegetable or Animal Origin.

- 83 Russ & Co., M. H., Prague.—Hops. 66
- 83a Zeschks, L., Agram.—Rags. 66
- 84 Land & Forest Economy District Union, Neustadt, Moravia.—Flax. 66
- 85 Narbuth, Johann, Palanka, Hungary.—Hemp. 66
- 86 Károlyi, Count Alois, Stampfle, Hungary.—Sheep wool in fleeces and rolls. 67
- 87 Hunyady, Count Emerich, Uermeyi, Hungary.—Wool fleeces. 67
- 88 Sheep-wool Washing Co., Budapest.—Cleaned wool. 67

## Machines, Implements, and Processes of Manufacture.

- 89 Auer, Josef, Senftenberg, near Krems.—Vine shears, gardeners' and insect scissors, pruning saw, and sheep shears. 67
- 91 Austrian Commission, Vienna.—Scythes and sickles. 67
- 92 Mosdorfer, Balthasar, Weir, Styria.—Sickles. 67
- 93 Reibstein, Ignaz, Bubenc, Bohemia.—Beehives and utensils. 67

## Agricultural Engineering and Administration.

- 94 Wärmer, Sigmund, Vienna.—Drain pipes. 68
- 95 Konnstein, Gottfried, Prague.—Ether and essences. 68
- 96 Sheep-wool Washing Co., Budapest.—Potash. 68
- 97 Haas & Rosenfeld, Gaya.—Ether. 68

# SWITZERLAND.

(NOTE.—*The Agricultural Exhibit of Switzerland is installed in the Main Building, and catalogued in that volume.*)

# BELGIUM.

(NOTE.—*The Agricultural Exhibit of Belgium is installed in the Main Building, and catalogued in that volume.*)

# NETHERLANDS.

(*West of West Aisle, Columns 3 to 5.*)

## Agricultural, Animal, Vegetable Products.

### Arboriculture and Forest Products.

- \* Thyssen, C. J. F.—Sieve frames. 600
- 2 Kleintjes, J., Rotterdam.—Plant 601  
100 years old.
- 3 Huiskamp, F. A., Amsterdam.— 604  
Cork.
- Agricultural Products.**
- 4 Dutch Agricultural Society (collective exhibit.—Agriculture, horticulture, arboriculture. 620
- 5 Agricultural Association (collective exhibit), Geldrian.—Agricultural products. 620
- 6 Zeeland Association for Encouragement of Agriculture & Cattle-Breeding (collective exhibit), Middleburg.—Seeds, dye-woods, plants, and photographs of cattle. 620
- 7 Bouma, N. G. & J. G., Sneek.—Buckwheat. 620
- 8 Poel, C. P. van der, Brielle. 620  
a Wheat, barley, oats.  
b Cabbage. 621  
c Seeds. 624
- 9 Post, C. G. van der, Gouda.—Cigars. 623
- 10 Bleckmann, A. & B. C., & Van der Poel, H., Arnhem.—Cigars. 623
- 11 Mignot, A. J., & de Block, A. A. M., Eindhoven.—Cigars. 623
- 12 Jagt, P. G. van der, & Francois, J., Utrecht.—Cigars. 623
- 13 Koppen, H. T., & Son, Leerdam.—Cigars. 623

### Water Animals, Fish Culture and Apparatus.

- 14 Maas, A. E., Scheveningen.—Boats, nets, hooks, etc. 647

### Animal and Vegetable Products.

- 15 Heil, L. W., Haarlem.—Edam cheese. 651
- 16 Goede, D., Alkmaar.—Cheese. 651
- 17 Vliet, A. van, Bergambacht.—Cheese and butter. 651
- 18 Jong, de, M. & K., Hoorn.—Edam cheese. 651
- 21 Drama van Valkenburg, S., Leeuwarden.—Liver-oil containing iodine and iron. 652
- 22 Heijnsbergen, P. van, Zaandam.—Liver-oil containing iron. 652
- 23 Klütgen, J. H., Rotterdam.—Bedfeathers. 652
- 24 Visser, J., Amersfoort.—Brown and white wax. 654
- 25 Surie, Widow J. W., & Son, & Co., Rotterdam.—Preserved eatables. 656
- 26 Nieuwenhuijs, J. H., jr., & Co., Amsterdam.—Conserved eatables in tins, boxes, and bottles. 656
- 28 Hoogenstraaten, D. A. J., Leiden.—Vegetables and fruit in cans and boxes. 656
- 29 Wolff, M. B., Amersfoort.—Flour, ground and unground. 657
- 30 Schober, J. H. S., Utrecht.—Flour. 657

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- |  |     |   |     |     |
|--|-----|---|-----|-----|
| 81 Van Marken, J. C., jr., Delft.  |     | 52 Hoppe, P., Amsterdam.—Gin, liquors, and distillations.                             | 657 | 660 |
| α Corn.  | 657 |   |     |     |
| β Alcohol.   | 660 | 53 Bols, de Erven Lucas, Amsterdam.—Fine liquors.                                     | 660 | 660 |
| γ Corn cakes.  | 661 |   |     |     |
| δ Oil.   | 662 | 54 Oostra, G. Wildervank, Groningen.—Liquor and elixir.                               | 660 | 660 |
| 82 Grootes, Pz. M., Westsaan.—Cacao, chocolate, and chocolate.                     | 658 | 55 Hofman, A. J. T., Woerden.—Liquors, bitters, extracts, and spirits.                | 660 | 660 |
| 83 Driessen, C. A., J. P., & H. T., Rotterdam.—Cacao, chocolate, and cacao-butter. | 658 | 56 Wynand, Fockink, Amsterdam.—Fine liquors.  | 660 | 660 |
| 84 Haagen, R. C. van, Utrecht.—Cacao, cacao-butter, and chocolate.                 | 658 | 57 Houtman, A., & Co., Schiedam.—Gin.   | 660 | 660 |
| 85 Egberts, B. H., Dalfsen.—Succory.   | 658 | 58 Valk, J. van der, & Co., Delfshaven.—Gin made of grain double distilled.           | 660 | 660 |
| 86 Duijvis, J., Koog-aan-de-Zaan.—Starch.  | 658 | 59 Zuijlkom, van Levert, & Co., Amsterdam.—Fine liquors, bitters, gin, brandy, etc.   | 660 | 660 |
| 87 Veenhoven, Schuringa, & Co., Wildervank.—Potato-flour.                          | 658 | 60 Meder, J. J., Schiedam.—Swag.  | 660 | 660 |
| 88 Sloet van Marxveld, G., Baron, Volenhoven.—Syrup in bottles.                    | 659 | 61 Levert & Co., Amsterdam.—Liquors.  | 660 | 660 |
| 89 Verweij, N., & Co., Tiel.—Sugar of grape and potato-meal.                       | 659 | 62 Rademakers, A. C., Delfshaven.—Gin.  | 660 | 660 |
| 40 De Bont, M. J., Amsterdam.—Confectionery and chocolate, in forms and moulds.    | 659 | 63 Smits, F. H. M., Breda.—Strong beer.   | 660 | 660 |
| 41 Visser, J., Amersfoort.—Brown and white mead.                                   | 660 | 64 Van Dulken, Weiland, & Co., Rotterdam.—Gin, brandy, and alcohol.                   | 660 | 660 |
| 42 Pollen, L. P. M., Rotterdam.—Liquors.   | 660 | 65 Lensvelt, G., Gravenhage.—Table-biscuit, cake, ship-bread.                         | 660 | 660 |
| 43 Schade van Westrum, J. C., Schiedam.—Gin.                                       | 660 | 66 Ulrich, W. D., Rotterdam.—Ship-biscuit.  | 660 | 660 |
| 44 Kiderlen, E., Delfshaven.—Alcohol and potash.                                   | 660 | 67 De Jongh, Ws. D., Dordrecht.—Vegetable oils and seed cakes.                        | 660 | 660 |
| 45 Bal, J. J., Middelburg.—Red currant wine.                                       | 660 | 68 Kruijsmulder, Cs. D., Amsterdam.—Vegetable oils.                                   | 660 | 660 |
| 46 Catz, S., Pekel, A.—Bitters and liquors.  | 660 | 69 Dutch Association for Encouragement of Flax Industry, Rotterdam.—Flax and linseed. | 660 | 660 |
| 47 Groen, Gz. J. B., Amsterdam.—Bitters and wine.                                  | 660 | 70 Gorter Brothers, Dorkum.—Flax.   | 660 | 660 |
| 48 Stibbe, Ls. G., Kampen.—Fine liquors and bitters.                               | 660 | 71 Van Casteel, A. F., Rotterdam.—Holland, Free land, and Iceland flax.               | 660 | 660 |
| 49 Nolet, J. J. G., Schiedam.—Gin and spirits.                                     | 660 | 72 Mulder, L., Arnhem.—Agricultural newspaper.  | 660 | 660 |
| 50 Boots, Erven Wed, F. A., Amsterdam.—Liquors.                                    | 660 |   |     |     |
| 51 Blankenheijm, J. J. M., & Lede, C. A. E. van, Rotterdam.—Gin.                   | 660 |   |     |     |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## DENMARK.

(NOTE.—*The Agricultural Exhibit of Denmark is installed in the Main Building, and catalogued in that volume.*)

## SWEDEN.

(West Avenue, Columns 6 to 10.)

## Forest, Agricultural, Animal, and Vegetable Products.

## Agriculture, Arboriculture, and Forest Products.

- 1 New Gellivara Co. (limited), Lulea.  
—Fir timber grown at the latitude of 67°  
N.; specimens of lumber. 600

## Agricultural Products.

- 3 Fogelmark, Sixten, Ava, Lulea.—  
Cereals. 620
- 4 Hagendahl, C. A., Örebro. 620  
a Cereals. 624  
b Seeds. 624
- 5 Hofmeister, Ch., Ingelstad, Kristianstad.—Cereals. 620
- 6 Hultenberg, C. A., Borgholm.—Barley. 620
- 6a New Gellivara Co. (limited), Lulea.—Agricultural products. 620
- 7 Kalmar Agricultural Society, Westervik.—Cereals. 620
- 8 Norbotten Agricultural Society, Lulea.—Agricultural products. 620
- 10 Platen, Count Carl von, Örbyhus.—  
a Cereals. 624  
b Seeds of forage plants. 620
- 12 Scheele, G. von, Kilanda, Göteborg.  
a Cereals. 620  
b Grass seeds. 624
- 14 Stenström, O. E., Gardsjö, Karlstad.—Cereals. 620
- 15 Upsala Agricultural Society, Upsala.  
a Cereals. 620  
b Seeds. 624
- 16 Westerbottens Agricultural Society, Umeå.—Cereals. 620
- 17 Westmanlands Agricultural Society, Stenby, Strömsholm.  
a Cereals. 620  
b Seeds. 624
- 19 Örebro Agricultural Society, Örebro, Nora.—Cereals. 620
- 21 Berggren, D. & J., Stockholm.—Tobacco. 623
- 22 Dahl, P., Carlshamn.—Snuff. 623
- 23 Hennig & Papenhagen, Kalmar.—Chicory. 623

## Water Animals, Fish Culture, and Apparatus.

- 27 Amundson, Mrs. C. M., Uddevalla.—Oyster anchovy. 642
- 28 Andersson, Gustaf, Fjellbacka.—Anchovy and sardines. 642
- 29 Bergström, H. C., Lysekil.—Anchovy and herrings. 642

- 30 Ericsson, N. O., Tangen, Lysekil.—Anchovies and herrings. 642
- 31 Hallgren, J. J., Gullholmen, Öroust.—Anchovies and herrings. 642
- 32 Royal Swedish Commission, Stockholm.  
a Pickled fish. 642  
b Instruments and apparatus for fishing. 647
- 33 Lundgren, P. W., Stockholm.—Preserved fish. 642
- 34 Lysell, Aug., Lysekil.—Anchovies. 642
- 35 Nilsson, Edv., Grebbestad.—Preserved mackerel. 642

## Animal and Vegetable Products.

- 38 Wästfelt, Carl C., Kölingsholm Mullsjö.—Rennet. 651
- 40 Ericsson, Anders, Stockholm.—Calfskins. 652
- 41 Johannesson, C. S., Stockholm.—Leather. 652
- 44 Frommel, C. J., Göteborg.  
a Preserved fruits. 656  
b Confections. 661
- 45 Wikström, Zacharias, Stockholm.—Preserved vegetables. 656
- 46 French Steam Flour Mills, Landskrona.—Flour and grit. 657
- 47 Scheele, G. von, Kilanda, Göteborg.—Flour and other products of grinding. 657
- 48 French Steam Flour Mills, Ystad.—Flour and other products of grinding. 657
- 52 Berg, C. G., Karlshamn.—Punch and whisky. 660
- 53 Bergen, J. N. von, & Son, Karlshamn.—Punch. 660
- 54 Broddelius & Akerman, Göteborg.—Punch. 660
- 55 Cederlund's, J., Sons, Stockholm.—Punch. 660
- 56 Creutz, A., Mariefred.—Punch. 660
- 57 Dahlheim & Engström, Stockholm.—Punch. 660
- 59 Högestedt & Co., Stockholm.—Punch. 660
- 60 Moboda Manufacturing Co., Moboda.—Spirits made from lichens. 660
- 61 Tulldahl, A. H., Landskrona.—Pale ale. 660
- 62 Pettersson, Otto, Stockholm.—Punch. 660
- 63 Platin, C. G., & Co., Göteborg.—Punch. 660
- 64 Thalin, Waldemar, Nyköping.—Punch. 660

For classes of exhibits, indicated by numbers at end of entries. see Classification, pp. 12-14.

## Machines, Implements, Engineering, and Administration.

- 65 Wallis, A. B., Dybeck, Ystad.—  
Ale. 661
- 65a Ullander, A., Upsala.—Punch. 660
- 66 Feith, H. J., & Son, Upsala.—Biscuits. 661
- 67 Royal Swedish Commission, Stockholm.—Dried bread. 661

## Machines, Implements, and Processes of Manufacture.

- 69 Eklundh, L. P., Ulricehamn.—  
Plows. 670
- 70 Göteborg Machine Co. (limited),  
Göteborg.—Plows. 670
- 72 Petterson, C. E., Elfdalen.—Scythes. 672
- 73 Andersson, J., Örebro.—Cow and  
sheep bells. 675

- 74 Atterling, C., Örebro.—Dairy apparatus. 675

- 75 Kallinge Iron Works, Malmö.—  
Dairy utensils of iron and pewter. 675

- 76 Rehnström, W., Köping.—Drawing  
of dairy-houses and utensils. 675

## Agricultural Engineering and Administration.

- 79 Friestedt, A. W., Stockholm.—Commercial fertilizers. 621

- 80 Betou, P. D. in de, Stockholm.—Artificial manures. 621

- 81 Superphosphate Manufacturing Co.,  
Stockholm.—Fertilizers. 621

- 84 Löfvenskiöld, Ch., Mariestad.—  
Drawings of farm-houses. 655

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.



# NORWAY.

(West of West Aisle, Columns 6 to 10.)

## Forest, Agricultural, Animal, and Vegetable Products, Fish Culture.

### Arboriculture and Forest Products.

- 1 Holst, Chr., Ladegaardsøen, Christiania.—Samples of Norwegian wood. 600
- 4 Holmen's Sawing & Planing Mills, Drammen.—Grooved and tongued flooring boards and mouldings. 600
- 5 Koldfossen's Bobbin Works, near Bergen.—Blocks and bobbins of birch and alder, condenser props, etc. 600
- 6 Thams & Co., M., Orkedal.—Trunks of trees, planks, battens, staves, cornices, cases, etc. 600

### Agricultural Products.

- 7 Schirod, Chr., Aker.—Wheat, rye, corn, and barley. 620
- 8 Holst, Chr., Ladegaardsøen, Christiania.—Cereals in ear and seeds. 620
- 9 Agricultural School, Aas near Christiania.  
a Oats, rye, and barley. 620  
b Seeds. 624
- 10 Rosenkrone, Baron, Rosendal.—Grain. 620
- 11 Stend Agricultural School.  
a Corn. 620  
b Potatoes. 622
- 11a Brovold, T.—Grain. 620
- 11b Torkildsen, J.—Grain. 620
- 11c Svaneoe, Chr.—Grain. 620

### Land Animals.

- 12 Holst, Chr., Ladegaardsøen, Christiania.—Photographs of Telmark cows and description of the race. 631

### Marine Animals, Fish Culture and Apparatus.

- 13 Museum of Bergen, Bergen.  
a Mammals. 640  
b Fishes. 641  
c Crustaceans. 643  
d Mollusks, oysters, etc., stuffed and in alcohol. 644
- 15 Bergens Røgeri, Bergen.—Red herrings. 642
- 16 Board of Commerce, Bergen.  
a Herrings, cods, ling, saiths, tusks, haddocks, etc., pickled and dried. 642  
b Fish-oil, fish-roses. 646
- 17 Board of Commerce, Alesund.  
a Dried and salted fish. 642  
b Collection of fishing tackle. 647
- 18 Hjul & Platou, Christiania.—Anchovies. 642
- 19 Johnsen, Chr., Christiansund.—Salted and dried cod. 642

- 21 Mohn, Peter, Bergen.—White herrings. 642
- 22 Nordrock, Wm., Christiania.—Anchovies. 642
- 23 Tellefsen, Mrs. Rina, Christiania.—Anchovies. 642
- 24 Smith, Mrs. Gina, Christiania.—Anchovies. 642
- 25 Soyland, L. B., Flekkefjord.—Preserved fish. 642
- 26 Dons, Henrik, Christiania.—Fish and anchovies. 642
- 27 Helgesen, H. A., Aalesund.—Preserved salmon, lobsters, etc. 642
- 28 Ronneberg, Carl A., Aalesund.—Salt fish. 642
- 29 Hjorth, Fr., Fredrikstad.—Anchovies. 642
- 30 Lund, Georg, Christiania.—Anchovies. 642
- 31 Thorne, Chr. Aug., Moss.—Anchovies. 642
- 32 Egidius, Peter, Bergen.—Herring and anchovies. 642
- 33 Bordewich & Co., Lyngvær.—Fishmeal, fish-glue, caviar, fish-oil. 646
- 34 Dahl, Jens. O., Havøen.—Cod and herring nets, cod-lines. 647
- 35 Erichsen, Thomas, Bergen.—Fish-hooks. 647
- 36 Fagerheim Net Company, Bergen.—Salmon and herring seines, cod, mackerel, and herring nets. 647
- 37 Kraasby Brothers, Aalesund.—Bait for cod-lines. 647
- 38 Falck, Ytter, Christiania.—Norwegian fishing sled with implements. 647
- 39 Bergen Glass Works, Bergen.—Buoys and floats for fishing nets and lines. 647

### Animal and Vegetable Products.

- 40 Rosing's, A., widow, Christiania.  
a Condensed milk. 651  
b Crackers of fishmeal. 651
- 40a Stend Agricultural School.—Butter. 651
- 41 Lund, Georg, Christiania.—Preserved old cheese. 651
- 42 Klem, Hansen, & Co., Trondhjem.—Leather and belting. 652
- 43 Meyer, Samuel B., Bergen.—Leather. 652
- 44 Hallen, J. P., Christiania.—Leather. 652
- 45 Fossen's Tannery, Flekkefjord.—Leather. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products, Implements, Engineering.

- 46 Dalen's Tannery, Flekkefjord.—Leather. 652
- 48 Haar & Wesnaes, Stavanger.—Preserved meats, etc. 656
- 49 Helgesen, H. A., Aalesund.—Preserved meats, etc. 656
- 50 Stavanger Preserving Company, Stavanger.—Preserved meats, beef, fowls, fish, milk, cream, etc. 656
- 51 Dons, Henrik, Christiania.—Preserved meats, game, poultry, soups. 656
- 52 Tellefsen, Mrs. Rina, Christiania.—Preserved game. 656
- 53 Norwegian Condensed Milk Company, Christiania.—Condensed milk. 656
- 54 Thorne, Chr. Aug., Moss.—Preserved meat and vegetables. 656
- 55 Norwegian Preserving Co., Mandal.—Preserved meats and vegetables. 656
- 56 Christiania Brewery, Christiania.—Pale ale. 660
- 57 Dahl, E. C., Trondhjem.—Pale ale. 660
- 58 Forseth, O. N., & Co., Christiania.—Pale ale. 660
- 59 Frydenlund Brewery, Christiania.—Pale ale. 660
- 60 Hamar Brewery, Hamar.—Pale ale. 660
- 61 Kongsberg Brewery, Kongsberg.—Pale ale. 660
- 63 Lysholm, Jorgen B., Trondhjem.—Norwegian brandy and punch. 660
- 64 Poulsen, H., & Co., Christiania.—Arrack punch. 660
- 65 Ruud, J. A., Christiania.—Pale ale from Moss brewery, Norwegian corn brandy. 660
- 66 Aass, P. L., Drammen.—Beer. 660
- 68 Wriedt, Chr., Drammen.—Beer. 660
- 69 Tandberg, Frants, Drammen.—Norwegian cordials. 660
- 70 Salicath, Oscar, Christiania.—Sugar-drops and punch. 660
- 71 Anisdahl, R. O., Skien.—Drops and peppermint. 662
- Machines, Implements, and Processes of Manufacture.**
- 72 Cathrineholm's Foundry, Fredrickshald.—Agricultural implements. 670
- 72a Stend Agricultural School.—Plows. 670
- 73 Rosing, Ulrik, Christiania.—Mask for killing cattle. 674
- Agricultural Engineering and Administration.**
- 74 Norwegian Fish Guano Company, Christiania.—Fish guano. 680
- 75 Bordewich & Co., Lyngvær.—Fish guano. 681
- 76 Foyn, Sven, Tonsberg.—Fish guano. 681
- 77 Holst, Chr., Ladegaardsøen, Christiania.—Norwegian artificial manure. 681
- 77a Foyn, Sven, Tonsberg.—Whale oil, stearine. (*See Department II., Main Building.*) 201
- 77b Board of Commerce, Aalesund.—Models of fishing boats. 394
- 77c Museum of Bergen, Bergen.—Models of fishing boats; fisherman's hut and ice store. 394

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## ITALY.

(West of East Avenue, Columns 1 to 4.)

## Fruits, Agricultural, Animal, Vegetable Products.

## Arboriculture and Forest Products.

- 1 Favare, Marquis Delle, Palermo.—  
Sumac leaves. 602
- 2 Romano, Gaetano, Palermo.—Su-  
mac. 602
- 3 Cernigliano, Vizzi Carmelo, Trapani.  
—Sumac leaves. 602
- 4 Castorina & Parlato, Catania.—Su-  
mac. 602
- 5 Scala, Baron Sciacca della, Palermo.  
—Sumac. 602
- 6 Aula, Domenico, & Co., Trapani.—  
Sumac. 602
- 7 Special Committee of Salerno, Sa-  
lerno.—Manna. 603
- 8 Chamber of Commerce and Arts, of  
Bari.—Sweet almonds, mustard seed. 605
- 9 Parlato, Luigi, Syracuse, Sicily.—  
Almonds. 605
- 10 Niceforo, Nicola, Catania.—Hazel  
nuts. 605
- 11 Ella, Antonino, & Sons, Catania.—  
Pistachio almonds, flax seed, hazel nuts,  
mustard seed. 605
- 12 Agricultural Committee of Palermo.  
—Collection of seeds. 605
- 13 Massullo, Cav. Luigi, Messina.—  
Dried nuts. 605
- 14 Council of Polizzi, Generosa, Paler-  
mo.—Avellane nuts. 605

## Pomology

- 15 Rossi, Cav. Cesard Leopardi, Comi-  
so, Syracuse.—Olives. 611
- 16 Crispo, Moncada Carlo, Catania.—  
Lemons, oranges. 611
- 17 Chamber of Commerce and Arts, of  
Bari.—Olives. 611
- 18 Lanzara, Raffaele, Salerno.—Lem-  
ons, oranges. 611

## Agricultural Products.

- 19 Ciaccio, F. Paul, Palermo.—Various  
grains. 620
- 20 Agrarian Colony of S. Martino, Pa-  
lermo.—Grains. 620
- 21 Grande Latino, Baron Corrado, &  
Bros., Avola, Palermo.—Grain prod-  
ucts 620
- 22 Porcari, Baron Angiolo, Palermo.—  
Grain products. 620
- 23 Fornasa, Vincenzo, Cologna Veneta,  
Verona.—Various cereals. 620
- 24 Ferrarini Bros. & Co., Formigine,  
Modena.—Rice. 620

- 25 Malinverni, Secondo, Vercelli, No-  
vara.—Rice. 620

- 26 Scochiolini, Adone, Rome.—Mus-  
tard. 623

## Water Animals, Fish Culture and Apparatus.

- 27 Avellino, Antonio, Leghorn.—Sar-  
dines in oil. 642
- 28 Stiassi, Filippo, Bologna.—Eels 642

## Animal and Vegetable Products

- 29 Agrarian Committee of Chiavari  
a Cheese. 651  
b Fruits. 656  
c Wine and vinegar. 660
- 30 Guscetti, E., Milan.  
a Parmesan and Gorgonzola cheese. 651  
b Sausages. 656
- 31 Baldini, Agostino, & Co., Pescia,  
Lucca.—Sole leather. 652
- 32 Aste, D. Stefano, Public Slaughter  
House, Florence.—Albumen. 652
- 33 Casarino, Mariellus, St. Gottard,  
Genoa.—Leather. 652
- 34 Fornari, Antonio J. Batta, Fabriano,  
Ancona.—Leather. 652
- 35 Mercurelli, Pietro, Fabriano, An-  
cona.—Sole and colored leather. 652
- 36 Baluffi, Nicola, & Co., Ancona.—  
Dressed hides, leather for saddlery. 652
- 37 Varale, Antonio, Biella, Turin.—  
Dressed hides. 652
- 38 Banfi, Giuseppe Flavio, Milan.—  
Glue. 652
- 39 Fibbi, Raffaele, Fabriano, Ancona.  
—Glue and size. 652
- 40 Fino, Luigi, & Co., Turin.—Albu-  
men. 653
- 41 Tramontani, D., Bologna.—Hon-  
ey. 654
- 42 Brolo, Duke Federigo Lancia di,  
Palermo.—Honey of orange flower. 654
- 43 Scala, Baron Sciacca della, Palermo.  
—Honey and wax. 654
- 44 Morandi, Pietro, Milan.  
a Wax. 654  
b Liquors. 660
- 45 Reali, Giuseppe & Gavazzi, Ercole,  
Venice.—Wax. 654
- 46 Bartolucci-Godolini Brothers,  
Rome.—Honey. 654
- 47 Acclimatization and Agricultural  
Society of Palermo.  
a Honey. 654  
b Fruits in alcohol. 656

## Animal and Vegetable Products, Wines.

- 48 Giannelli, Raffaello, Sienna.  
 a Honey. 654  
 b Juniper berries. 656
- 49 Massardo, Nicolo, Sampierdarena, Genoa.—Preserves. 656
- 50 Figatner, Enrico, Milan.—Dried meat. 656
- 51 Troia, Alfri, Syracuse.—Paste for soup. 656
- 52 Contessini, Gerini & Co., Leghorn.—Candied fruits. 656
- 53 Curry, Giacomo, Leghorn.—Preserves. 656
- 54 Bougleuse Bros. & Co., Leghorn.—Paste for soup. 656
- 55 Klein, Enrico, Leghorn.—Candied fruits. 656
- 56 Samoggia, Gaet. & Brothers, Bologna.—Bologna sausages and salted meats. 656
- 57 Lanzarini Brothers, Bologna.—Sausages and salted meats. 656
- 58 Colombini, Ulisse, Bologna.—Sausages and salted meats. 656
- 59 Serrazanetti, Giovanni Anzola, Bologna.—Tomato sauce and preserved tomatoes. 656
- 60 Nenzioni Brothers, Bologna.—Preserved tomatoes. 656
- 61 Zappoli Brothers, Bologna.—Bologna sausages and salted meats. 656
- 62 Grillini, Nanni & Co., Bologna.—Sausages and salted meats. 656
- 63 Zanetti, Guido, Bologna.—Sausages and salted meats. 656
- 64 Bordonì, Natale & Co., Bologna.—Sausages and salted meats. 656
- 65 Bassi, Medando, & Ugo Brothers, Bologna.—Sausages and salted meats. 656
- 66 Tacconi, Paolo, Bologna.—Sausages and salted meats. 656
- 67 Orsi, Raphael, Bologna.—Sausages and salted meats. 656
- 68 Frigieri, Giuseppe, Modena.—Hams, bologna sausages, etc. 656
- 69 Bellantani, Giuseppe, Modena.—Bologna sausages and salted meats. 656
- 70 Zironi, Giovanni, Fiorano, Modenese.—Salted meats. 656
- 1 Forni, Alessandro, Bologna.—Sausages and salted meats. 656
- 72 Molinari Brothers, Modena.—Bologna sausages. 656
- 73 Special Committee of Salerno.—Paste for soup. 656
- 74 Napoli, Francesco, Salerno.—Preserved tomatoes. 656
- 75 Peracchi, Enrico, Parma.—Tomato sauce. 656
- 76 Domenici, Annibale, Pontasserchio, Pisa.—Pork, meat, and bologna. 656
- 77 Frosini, Edoardo, & Brother, Pontassana, Pisa.—Paste for soup. 656
- 78 Gentili, Ferdinando, Pontasserchio, Pisa.—Paste for soup. 656
- 79 Carulli, David, Cremona.—Bologna and salted meats. 656
- 80 Castino, G. B., & E. Scotto, Turin.—Paste for soup. 656
- 81 Stiassi, Filippo, Bologna.—Mortadelle and other bologna sausages, etc. 656
- 82 Pinardi, Pietro, Gottolengo, Brescia.—Mustard and preserves. 656
- 83 Gardenghi, Enrico, Modena.—Sausages, meats, zamponi. 656
- 84 Greco, Marco, Bologna.—Liquors. 656
- 85 Tosi, Bellucci, Giacomo, Modena.—Preserves. 656
- 86 Luca, de, Francesco, Termini, Palermo.—Paste for soup. 656
- 87 Russo, Biagio, Termini, Palermo.—Paste for soup. 656
- 88 Cammarato, Carmelo, Palermo.—Paste for soup. 656
- 89 Bruno, Giuseppe, Palermo.—Preserves. 656
- 90 Verdone & Patera, Palermo.—Sauces and conserves. 656
- 91 Merlo, Vincenzo, Baron, Palermo.—Dried figs. 656
- 92 Sciacca della Scala, Baron, Palermo.—Dried figs. 656
- 93 Guli, Salvatore, Cav., Palermo.—Candied fruits. 656
- 94 Ferrari, Sebastiano, Rome.—Paste for soup. 656
- 95 Palazzo, Duke del, Catania.—Paste for soup. 656
- 96 Amato Brothers, Catania.—Candied fruits. 656
- 97 Caliri, Salvatore, Messina.  
 a Candied fruits. 656  
 b Liquors. 656
- 98 Botti, Alessandro, Chiavari, Genoa.  
 a Dried fruits. 656  
 b Wine. 656
- 99 Borna Brothers, Treviso.  
 a Pickles. 656  
 b Vinegar. 656
- 100 Guglielmini, Andrea, Salerno.  
 a Dried fruits. 656  
 b Wine. 656
- 101 Rinaldo, Raffaele, Salerno.  
 a Dried fruit. 656  
 b Wine. 656
- 102 Agosti Brothers, Bagnoria, Rome.  
 a Dried prunes. 656  
 b Vermouth, wines, liquors. 656
- 103 Viscardi, Geremia, Bologna.  
 a Preserved fruits. 656  
 b Small biscuits. 656
- 104 Chamber of Commerce & Art. Bari.  
 a Dried figs. 656  
 b Wine. 656  
 c Chocolate. 656
- 105 Simone, Raffaele, de Torre Annunziata, Naples.—Best flour paste. 656
- 106 Lazzaro, Salvatore, Messina.—Liquors. 656
- 107 Marzi Brothers, Poggibonsi, Siena.—Wines. 656
- 108 Castiglioni, Domenico, Parma.—Wines. 656
- 109 Callegari, Giuseppe, Piacenza.—Wines and liquors. 656
- 110 Ghizzoni, Luigi, Piacenza.—Liquors. 656

## Wines and Liquors.

- 111 Clerici, Costantino, Milan.—Vermouth. 660
- 112 Torelli, Lenaf Luigi, Count, Milan.—Wines. 660
- 113 Italian Enological Committee, Turin.—Wesin and vermouth. 660
- 114 Ricci, Emiliano, Sienna.—Liquors. 660
- 115 Torricelli, Andrea, Florence.—Various liquors. 660
- 116 Minutillo, Giovanni, Palermo.—Liquors. 660
- 117 Guli, Salvatore Luigi di, Palermo.—Wines. 660
- 118 Giaccone, Pietro, Palermo.—Marsala wines. 660
- 119 Martillaro, Mar. Carlo, Palermo.—Wines. 660
- 120 Catanzaro, Giuseppe, Termini, Palermo.—Wines. 660
- 121 Florio, Ignazio, & Vincenzo, Palermo.—Marsala wines. 660
- 122 De Nava, Giuseppe di P., Reggio, Calabria.—Wines. 660
- 123 Gabaldoni, Andrea Carlo, Varese Ligure, Sestri Levante.—Wines. 660
- 124 Enological Society of Scandiano.—Wine. 660
- 125 Malatesti, Augusto, Modena.—Wine. 660
- 126 Enological Society of Savignano.—Wine. 660
- 127 Buton, G., & Co., Bologna.—Liquors. 660
- 128 Rossi, Leopardi Cav. Cesard, Comiso, Syracuse.—Wine. 660
- 129 Maltese, Felice, Mayor of Vittorio Scoglitti, Sicily.—Wines. 660
- 130 Greco-Cassia, Cav. Luigi, Syracuse.—Wine. 660
- 131 Vitale, Tommaso, Palermo.—Neapole liquor. 660
- 132 Albiate, Edward, Duke, Palermo.—Casks of duca. 660
- 133 Zeni, Niccolo, Ferrara, Rosolio.—Cordial made from cocoa. 660
- 134 Caretti Brothers, Rome.—Vermouth and liquors. 660
- 135 Strutt, Arthur I., Rome.—Wine. 660
- 136 Bisco, Luigi, & Co., Brescia.—Liquors. 660
- 137 Tarussi, Luigi, & Brothers, Leghorn.—Vermouth, wine. 660
- 138 Vitiello & Torrese, Torre del Greco, Naples.—Wines. 660
- 139 Anselmi & Marassi, Naples.—Alcohol. 660
- 140 Del Bono, Enrico, Syracuse.—Wine. 660
- 141 Giordano, Gio. Batta, Vittorio, Sicily.—Wine. 660
- 142 Terranova Commillesi, G. B., Vittorio, Sicily.—Wine. 660
- 143 Maltese, Alessandrello, Vittorio, Sicily.—Wine. 660
- 144 Targia, Aresso della, Syracuse.—Liquors, curacao. 660
- 145 Merio, Calcedonio, Syracuse.—Wine. 660
- 146 Scuderi, Giuseppe, Catania.—Wine. 660
- 147 Mancini, Antonino, Catania.—Wine. 660
- 148 Euplio, Reina, Catania.—Wine. 660
- 149 Paterno, Castello di Bisari Giuseppe, Catania.—Wine. 660
- 150 Contarella, Franco, Baron, Catania.—Wine. 660
- 151 Romeo, Michele, Catania.—Wine. 660
- 152 Rossi, Tedeschi Francesco, Catania.—Wine. 660
- 153 Mannino, Francesco, Baron, Catania.—Wine. 660
- 154 Crispo, Moncada Carlo, Catania.—Wine. 660
- 155 Grasso, Carmelo, Catania.—Liquors. 660
- 156 Carpanetti, Luciano, Bologna.—Liquors. 660
- 157 Paci, Cesare, Florence.—Wine. 660
- 158 Liccioli, Filippo, Florence.—Wine. 660
- 159 Agrarian Committee for Thirty Exhibitors, Florence.—Wine. 660
- 160 Ottaviani Brothers, Messina.—Wines. 660
- 161 Salvo, Salvatore di, Giarre Moscati, Messina.—Wines. 660
- 162 Salvo, Salvatore de, Messina.—Wines. 660
- 163 Pasali, Gaetano, Fermo, & Cottignano, Ascoli Piceno.—Liquors. 660
- 164 Sollnas, Arras Giuseppe, Sassari.—Wines. 660
- 165 Giacobini, Coriolano, Fano, Pesaro.—Liquors. 660
- 166 Leno, de Coronei, Nicolo, S. Demetrio, Corone, Calabria Citra.—Wine. 660
- 167 Agostini, Della Seta, Count Alfredo, Pisa.—Wine. 660
- 168 Lullato, G. Batta, Como.—Liquors. 660
- 169 Bonei Cassuccini Ottavio, Sienna.—Wine. 660
- 170 Zigliani, Cammillo, Bergamo.—Vinegar and essence of vinegar. 660
- 171 Magnaghi, Girolamo, Alexandria.—Vermouth. 660
- 172 Rossi, Vittorio, Asti, Alexandria.—Vermouth. 660
- 173 Berteia, Stefano, Alexandria.—Elixirs, wines, liquors. 660
- 174 Borelli, Luigi, Asti, Alexandria.—Eau-de-vie. 660
- 175 Metzger Brothers, Asti, Alexandria.—Beer. 660
- 176 Boschiero, Cav. Giovanni, Asti, Alexandria.—Wines. 660
- 177 Mossone, Antonio, Andorne, Turin.—Liquors. 660
- 178 Martini, Sola, & Co., Turin.—Vermouth. 660
- 179 Genta, Giovanni, Turin.—Vermouth. 660
- 180 Poglione, Widow, & Sons, Bra Cuneo.—Wine. 660

## Wines, Vegetable Products, Agricultural Implements.

- 181 Cavallone, Giovanni. Crescentino. Novara.—Vermouth 660
- 182 Bellardi, Dom. & Co., Turin.—Vermouth and liquor 660
- 183 Cinzano, Franco. & Co., Turin.—Vermouth. 660
- 184 Casoni, Giuseppe, Finale, Emilia.—Liquors. 660
- 185 Napoli, Giuseppe, Baronissi. Salerno.—Wine. 660
- 186 Palmieri, Benedetto of Gius., Salerno.—Wine. 660
- 187 Lanzara, Raffaello. Salerno.—Wine. 660
- 188 Murino, Nicola. Salerno.—Wine. 660
- 189 Agnini, Tommaso. Finale, Emilia.—Liquors. 660
- 190 Bellosi, Gio. Batto. Scandiano. Emilia.—Liquor 660
- 191 Musi, Luigi, Bologna.—Liquors. 660
- 192 Savorini, Francesco, S. Ionn Pasiato, Bologna.—Liquors. 660
- 193 Ronzani, Camillo. Bologna.—Beer. 660
- 194 Tucci, Savo Benedetto. Rome.—Wine. 660
- 195 Jacobini Brothers. Rome.—Wine. 660
- 196 Rospigliosi Clemente, Prince. Rome.—Wine. 660
- 197 Stella, Cav. Musio, Syracuse.—Wine. 660
- 198 Reggio, Arancio Francesco. Augusta, Sicily.—Liquors 660
- 199 Salibra, Antonino. Syracuse.—Wine and liquor 660
- 200 Bonanno, Michele, Baron, Syracuse.—Wine. 660
- 201 Maltese, Felice Vittorio. Sicily.—Wine. 660
- 202 Cassale Brothers. Syracuse.—Wine and liquors 660
- 203 Meli, G. B., S. Antonino, Baron. Chiaramonte, Syracuse.—Wine. 660
- 204 Lanza, Cav. Salvatore. Syracuse.—Wine. 660
- 205 Adorno Puma, Cav. Gaet., Syracuse.—Wine. 660
- 206 Bruschetti, C. Vincenzo. Camerino, Maura.—Wine 660
- 207 Piombino, Prince of, Foligno. Umbria.—Wine. 660
- 208 Farinola, M. Paolo, Florence.—Wine. 660
- 209 Albergotti, Geo., & Agostino Bros., Arezzo.—Wine. 660
- 210 Uffredugi, Giacomo. Perugia, Umbria.—Wine. 660
- 211 Rospigliosi, Clemente, Prince, Lampovechio, Florence.—Wine. 660
- 212 Galimberti, Giuseppe, Milan.—Liquors and vermouth 660
- 213 Marini & Poggi. Milan.—Liquors, stomachic and febrifuge elixirs. 660
- 214 Zannini & Galliani. Milan.—Liquors and extract of tamarind. 660
- 215 Isolatelli & Co., Milan.—Vermouth and liquors. 660
- 216 Cordini, Gaetano, & Brivio, Busto Arsizio, Milan.—Vermouth and liquors. 660
- 217 Branca Brothers & Co., Milan.—Vermouth, liquors, alcohol. 660
- 218 Facheris, Enrico, Lodi, Milan.—Wines and vinegar. 660
- 219 Vittone, Domenico, Milan.—Vermouth and liquors. 660
- 220 Ricasoli, Bettino, Baron, Florence.—Wines. 660
- 221 Montini, Pasquale, Fabriano, Ancona.—Vermouth and liquors. 660
- 222 Brenna, Santo, Como.—Liquors. 660
- 223 Nistri, Ferdinando, Florence.—Liquors. 660
- 224 Mostardini, Adolfo, Florence.—Liquors. 660
- 225 Cita, Francesco, & Co., Naples.—Liquors. 660
- 226 Marini, Ambrogio, Milan.—Liquors. 660
- 227 Scala, Giuseppe, Naples.—Wines. 660
- 228 Galloni, Luigi, Rome.—Wines. 660
- 229 Evoli, Ma. Giovanni, Rome.—Liquor. 660
- 230 Scala Pasquale, Naples.—Wine. 660
- 231 Francica Brothers, Naples.—Wine. 660
- 232 Barra, Luigi, Naples.—Wine. 660
- 233 Patalano, Orazio, Ischia Island, Naples.—Wine. 660
- 234 Masetti, Piero Pompeo, Count, Florence.—Wine. 660
- 235 Siccoli, Guido, Florence.—Wine. 660
- 236 Fantozzi, Cesare, Foligno, Umbria.—Liquors. 660
- 237 Burchi, Serafino, Pisa.  
a Liquors. 660  
b Candies. 660
- 238 Villiani, Dante, Pistoga.  
a Liquors. 660  
b Cakes, small biscuits. 660
- 239 Tamburini, Gaetano, Bologna.—Torrone and candies. 660
- 240 Cantelli, Giuseppe, Casapulla, Caserta.—Torrone. 660
- 241 Cerri, Luigi, Cremona.—Torrone with almonds. 660
- 242 Pirrone, Antonino, Messina.—Sea biscuits. 660
- 243 Andronico, Giuseppe, Nice, Messina.—Biscuits and paste for sea. 660
- 244 Loreti, Gioacchino, Rome.—Candy, cakes, and chocolate. 660
- 245 Moriondo & Gariglio, Turin.—Chocolate and confectionery. 660
- 246 Pagni, Faustino, & Co., Pontedera, Pisa.—Biscuits, English style. 660
- Textile Substances of Vegetable & Animal Origin.
- 247 Facchini, Pietro F., & Co., Bologna.—Raw and combed hemp. 660
- 247a Kluftinger, L., Bologna.—Raw and combed hemp. 660

## Agricultural Implements and Engineering.

**Machines, Implements, and Processes of Manufacture.**

248 Cagliesi, Raffaele, Ancona.—  
Plow. 607

249 Tomaselli, Giacomo, Cremona.—  
Plows. 670

250 Toroiatti, Luigi di Gio., Venice.  
—Harrow. 670

251 Porri, Luigi, Pisa.—Plow-share. 670

252 Rossi, Ercole, Parma.—Plow. 670

253 Calzoni, Alessandro, Bologna.—  
Agricultural machine. 670

254 Gattola, Nicola, Bari.—  
Plow. 670

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

255 Biggi, Giovanni, & Co., Placenza.—  
Hand reaping machine. 672

256 Uliengo, Giovanni, Biella, Novara.  
—Butter machine. 675

**Agricultural Engineering and Administration.**

257 Filopanti, Quirico, Bologna.—Plan  
of General Garibaldi's system of irrigation relating to the River Tiber. 680

258 Tramontani, D., Bologna.—Bee-  
hive. 683

**Collective Exhibit.**

259 Special Committee of Messina.—  
Samples of Sicilian products for exportation.

## BRAZIL.

*West of Nave, Columns 6 to 10.*

## Forest and Agricultural Products.

## Arboriculture and Forest Products.

- 1 Leao, Hermelino de.—Coal obtained from pine heart. 600
- 2 Muricy, Dr.—Pine heart. 600
- 3 Araujo & Silva.—Samples of woods. 600
- 4 Juparana, Baron of.—Samples of woods. 600
- 5 Faria, Souza.—Samples of woods. 600
- 6 Villa-Franca, Baron of.—Samples of woods. 600
- 7 Provincial Commission of S. Paulo.—Samples of woods. 600
- 8 Cavalcanti.—Samples of woods from Alagoas. 600
- 9 Province of Rio de Janeiro.—Samples of woods. 600
- 10 Castro, Borja.—Samples of woods used at the custom-house dock works, Rio de Janeiro. 600
- 11 Penitentiary, Rio de Janeiro.—Showcases made of Brazilian woods. 600
- 12 Couceiro.—Samples of woods in mosaic. 600
- 13 Barbôsa, F.—Samples of woods. 600
- 14 Muricy & Leao, Drs.—Samples of woods from Parana. 600
- 16 Province of Bahia.—Samples of woods and medicinal leaves. 600
- 17 Leite, Severino.—Ticus leaves. 600
- 18 Silva, Domingos.—Samples of woods from Macahé. 600
- 19 Province of Parana.—Lumber and timber. 600
- 20 Bueno, Pimenta.—Samples of woods from Para. 600
- 21 Rocha, Ignacio da.—Pine lumber from Parana. 600
- 22 Province of Goyaz.  
a Paparo or paper tree and samples of wood. 600  
b Resins. 603
- 23 Colony Itajahy.—Samples of woods for construction and furniture. 600
- 24 Barbôsa, J. F.—Samples of woods. 600
- 25 Gama, Asarias.—Cipó-páo (wood). 601
- 26 Municipality of S. Francisco.—Ornamental woods. 601
- 27 Municipality of S. José.—Ornamental woods. 601
- 28 Oliveira P. M. de.—Cumaté (dyeing wood). 602
- 29 Province of Ceará.  
a Dyeing wood. 602  
b Resins and gum. 603  
c Herries of mamona. 605

- 30 Perdigao.—Resins. 603
- 31 Province of Para.  
a Resins and caoutchouc. 603  
b Nuts. 605
- 32 Province of St. Catharina.  
a Samples of woods. 600  
b Resins. 603
- 33 Province of Amazonas.  
a Samples of woods. 602  
b Samples of indigo. 603  
c Isca-de-tracoa, made by ants, and caoutchouc. 603  
d Seeds. 605
- 34 Province of Alagoas.  
a Samples of woods. 600  
b Gums and resins. 603
- 35 Province of Ceara.—Resins and caoutchouc. 603
- 36 Costa, Gaudencio da.—Caoutchouc from Para. 603
- 37 Province of Pernambuco.  
a Woods. 600  
b Dyeing wood. 603  
c Gums. 603  
d Nuts. 605
- 38 Province of Rio-Grande-do-Norte.—Wax-dust, resins, gum, and caoutchouc. 603
- 39 Province of Minas-Geraes.—Resins. 603
- 40 Araujo, Castro.—Wax on the branch. 603
- 41 Sarafana, Felix.—Wax on the branch. 603
- 42 Rebello, Dr.—Dyeing barks. 603
- 43 Andrade, Ildefonso de.—Barks. 603
- 44 Martins, J. A.—Barks and leaves of the Eucalyptus giganteus. 603
- 45 Sardinha.—Resins. 603
- 46 Silva, T. R. da.—Resins. 603
- 47 District of Principe.—Resins. 603
- 48 Portugal, F. P. d'Azevedo.—Balsams. 603
- 49 District of Quebranguelo.—Resins. 603
- 50 Commission for Acari.—Resins. 603
- 51 Paes-Leme, Rosalina.—Linseed. 603

## Agricultural Products.

- 52 Scheffer, Melchior.—Barley in ear and threshed. 603
- 53 Martins, Ant.—Barley. 603
- 54 Schamalaké.—Barley. 603
- 55 Richter, Frederico.  
a Cereals. 603  
b Mustards and tobacco. 605

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.



## Agricultural Products.

- 56 Leao, Hermelino de.  
 a Rye, wheat, oats, linseed, and maize. 620  
 b Beans. 621  
 c Seeds. 624
- 57 N—, N—.  
 a Maize on the cob; carnauba straw. 620  
 b Tea from S. Paulo; coffee from Bahia. 623
- 58 Province of Parana.  
 a Wheat and rye. 620  
 b Medicinal plants. 621  
 c Manioc tubers. 622  
 d Matte, a substitute for tea; coffee, tobacco, cigarettes. 623
- 59 District of Lagea.—Cereals. 620
- 60 Colony Santa-Maria da Soledade.  
 a Rye, oats, and barley. 620  
 b Seeds and linseed. 624
- 61 Commission General for the National Exhibitions.  
 a Rice, corn, and barley. 620  
 b Medicinal plants. 621  
 c Spices, coffee, maté. 623  
 d Seeds. 624
- 62 Sampaio, J. M. Leite.—Unhulled rice. 620
- 63 Gomes, Cordeiro.—Unhulled rice. 620
- 64 Mello, J. C. de.—Rice. 620
- 65 Mendes, Olinto.—Corn. 620
- 66 Carvalho, B. Rocha.—Rice. 620
- 67 Souza, Bento de.—Wheat. 620
- 68 Valle, R. J. Ferreira.—Unhulled rice. 620
- 69 Municipality of Lage.—Wheat. 620
- 70 District of Quebranguelo.—Beans and guandu. 621
- 71 District of Votuverava.—Medicinal plants. 621
- 72 Correa, Laurenço.—Medicinal plants. 621
- 73 Freitas, G. de Sz.—Medicinal plants. 621
- 74 Araujo, A. J. Rois d'.—Medicinal plants. 621
- 75 Araujo, J. P. de Souza.—Medicinal plants. 621
- 76 Piratininga, L. Tebiriça.—Medicinal plants. 621
- 77 Foggia, Z. M.—Medicinal plants. 621
- 78 Barbôsa, Norberto.—Medicinal plants. 621
- 79 Guimarães, J. F.—Medicinal plants. 621
- 80 Dias, C. Falcao.—Medicinal plants. 621
- 81 Barros, Dr. J. J. d'Albuquerque.—Medicinal plants. 621
- 82 Athayde, M. E. de Sz.—Almacega (Icica-Icicariba). 621
- 83 Philippe, A.—Tears of the Virgin (medicinal plant). 621
- 84 Perdigao.  
 a Mediurnal plants. 621  
 b Bacury seeds. 624
- 85 Province of Ceara.  
 a Medicinal plants and beans. 621  
 b Coffee. 623
- 86 Province of Goyas.  
 a Medicinal plants. 621  
 b Tobacco. 623
- 87 Muricy & Leao.  
 a Beans. 621  
 b Seeds. 624
- 88 Leao, Ermelindo de.  
 a Beans. 621  
 b Ginger and snuff. 624
- 89 Province of Para.  
 a Barley. 620  
 b Cocoa, ginger, and tobacco. 623
- 90 Province of Alagoas.  
 a Medicinal plants. 621  
 b Vanilla and other seeds. 624
- 91 Province of S. Paulo.  
 a Medicinal roots. 621  
 b Chocolate. 623
- 92 Araujo, Rodrigues de.—Medicinal plants. 622
- 93 Moura, Ferreira de.—Potatoes. 622
- 94 Dr. Muricy.  
 a Sweet flag. 622  
 b Spices and tobacco. 623  
 c Seeds. 624
- 95 Brant, J. F. d'Andrade.—Manioc roots. 622
- 96 Heredia, Sa, Dr.—Heredia root. 622
- 97 Municipality of Cametá.—Cocoa. 623
- 98 Triste, J. M. d'Araujo.—Cloves of India. 623
- 99 Portella, F. Fernandes.—Vanilla. 623
- 100 Guimarães, M. A., & Pedrozo, H.—Vanilla aromatica. 623
- 101 Padua, A. de.—Vanilla. 623
- 102 Silva & Sons.—Cocoa. 623
- 103 Pinho, L. F. do.—Chocolate. 623
- 104 Lima, Dias.—Chocolate. 623
- 105 Ribeiro, J. A. F.—Chocolate. 623
- 106 Liborio & Ferreira.—Chocolate. 623
- 108 Province of Sergipe.—Coffee. 623
- 109 Province of Parahyba do Norte.—Coffee. 623
- 110 Presidency of Sancta Catharina.—Coffee. 623
- 111 Falcao, J. J. Franco.—Coffee. 623
- 112 Albuquerque, A. de Sa.—Coffee. 623
- 113 Lacerda, A. F. de.—Coffee. 623
- 114 Breves, J. J. de Sz.—Coffee. 623
- 115 Costa, P. M.—Coffee. 623
- 116 Silva, C. J., & Sons.—Coffee. 623
- 117 Carrao, Councillor.—Coffee and tea. 623
- 118 Montenegro, Commander.—Coffee from Nova-Louzan. 623
- 119 Atibaia, Baron of.—Coffee. 623
- 120 Tavares, J. Pinto.—Coffee from Parahyba-do-Sul. 623
- 121 Monteiro, P. J.—Coffee from Rio de Janeiro. 623
- 122 Portella, J. T. M.—Coffee from Muribeca. 623
- 123 Bornaud, L.—Coffee from Caravelas. 623
- 124 Magalhaes, F. L. d'Almeida.—Coffee from Triumpho. 623
- 125 Fernandez, C. J.—Coffee from Maragogipe. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Agricultural Products.

- |   |     |   |     |
|---|-----|---|-----|
| 126 Belens, J. L.—Coffee.   | 623 | 161 Mendouca, M. J.—Tobacco from Goyaz.                         | 623 |
| 127 Reines, N. A. Claudio.—Coffee from Monte Verde.                       | 623 | 162 Pinheiro, J. E.—Tobacco from Pará.                          | 623 |
| 128 Cunha, J. J. Alves da.—Coffee from Rio de Janeiro                     | 623 | 163 Jardim, J. R. de Moraes.—Tobacco from Goyaz.                | 623 |
| 129 Valein, M. d'Aguiar.—Coffee from Bananal.                             | 623 | 164 Meneses, Rev. M. de.—Tobacco.                               | 623 |
| 130 Vergueiro, I.—Coffee from Ibicaba.                                    | 623 | 165 Nascimento, Rev. A. F.—Tobacco.                             | 623 |
| 131 Siqueira, M. B. de.—Coffee and tobacco from Goyaz.                    | 623 | 166 Panitz, J. C.—Tobacco from S. Leopoldo.                     | 623 |
| 132 Nogueira, Dr. P. R.—Coffee from S. Paulo.                             | 623 | 167 Senna, N. B. de.—Tobacco from Mucury.                       | 623 |
| 133 Barros, L. A. de Sz.—Coffee from S. Paulo.                            | 623 | 168 Santos, M. A. dos.—Tobacco.                                 | 623 |
| 134 Krull, Frederika.—Coffee from S. Paulo.                               | 623 | 169 Silva, A. Ignacio da.—Rolled tobacco.                       | 623 |
| 135 Province of Goyaz.—Tobacco and cigarettes.                            | 623 | 170 Constantino, J.—Tobacco from Balpuedy.                      | 623 |
| 136 Colony of Assunguay.—Tobacco leaves.                                  | 623 | 171 Souza, M. L. de.—Cigarettes from Parana.                    | 623 |
| 137 Presidency of the Province of Bahia.—Cigars.                          | 623 | 172 Ribas, J. L. Sá.—Twist tobacco.                             | 623 |
| 138 Pereira & Braga, Cigar Manufactory.—Cigars.                           | 623 | 173 Cokin, E.—Twist tobacco.                                    | 623 |
| 139 Paes-Leme, Rosalina V. a Cigars and tobacco from the Colony Blumenau. | 623 | 174 Gonsalves, J. P.—Cigars.                                    | 623 |
| b Matte from St. Catharina.   | 623 | 175 Gama, T. J. de Sz.—Cigars.                                  | 623 |
| 140 S. Joao de Nitherav. Manufactory of.—Cigars and cigarettes.           | 623 | 176 Abreu, J. Monteiro d'.—Cigars.                              | 623 |
| 141 Moreira, Dr. d'Assis C.—Tobacco from Coddó.                           | 623 | 177 Borba, N. M.—Cigarettes.                                    | 623 |
| 142 Queiróz & Sona.—Tobacco from S. Paulo.                                | 623 | 178 Miranda, J. B. de.—Cigarettes.                              | 623 |
| 143 Levy, Salamon.—Snuff from Tefé.                                       | 623 | 179 Pernetta, F. D.—Cigarettes.                                 | 623 |
| 144 Schild, Joao.—Cigars from the Colony Sancta-Cruz.                     | 623 | 180 Ribas, A. L. d'Andrade.—Cigarettes and matte.               | 623 |
| 145 Herbst, Augusto.—Twist tobacco from the Colony Blumenau.              | 623 | 181 Ramos, L. F.—Cigarettes.                                    | 623 |
| 146 Rosenstock, G.—Tobacco from the Colony Joinville.                     | 624 | 182 Lepage, J. a Cigarettes.                                    | 623 |
| 147 Kopsch, Ch.—Tobacco from the Colony Blumenau.                         | 623 | b Seeds.  | 624 |
| 148 Merck, Maxim.—Tobacco from the Colony Blumenau.                       | 623 | 183 Miranda-Russo, F. A.—Tea from S. Paulo.                     | 623 |
| 149 Vander-Berg.—Tobacco leaves from the ex-Colony Sancta-Cruz.           | 623 | 184 Rego-Freitas, A. P. de.—Tea from S. Paulo.                  | 623 |
| 150 Seidler, C.—Leaf tobacco.   | 623 | 185 Neves, J. Ribeiro.—Tea from S. Paulo.                       | 623 |
| 151 Kalden, Baron of.—Leaf tobacco from the Colony Sancto-Anselmo.        | 623 | 186 França, F. A. Galvao da.—Tea from S. Paulo.                 | 623 |
| 152 Ketterman, V.—Leaf tobacco from the Colony Sancto-Anselmo.            | 623 | 187 Xavier, J. Ribeiro.—Tea from S. Paulo.                      | 623 |
| 153 Dietrich, A.—Leaf tobacco from the Colony Joinville.                  | 623 | 188 Mosqueira, A. L. M.—Tea from Minas-Geraes.                  | 623 |
| 154 Faria, B. de.—Tobacco from Bahia.                                     | 623 | 189 Correa, Hildelfonso.—Matte.                                 | 623 |
| 155 Grava, Fr. L. Sa.—Tobacco from Cachocira.                             | 628 | 190 Province of Minas-Geraes.—Matte.                            | 623 |
| 156 Aranha, J. D.—Tobacco and cigarettes.                                 | 623 | 191 Leao, Major V. F. de.—Matte in leaves, dried, and powdered. | 623 |
| 157 Ferreira, E. A.—Cigarettes.   | 623 | 192 Pacheco, D. dos Santos.—Matte leaves.                       | 623 |
| 158 Ferreira, Candido I.—Cigars from Cachocira.                           | 623 | 193 Braga, J. M. da Silva.—Matte leaves.                        | 623 |
| 159 Paraiso, D. V.—Carolina tobacco.                                      | 623 | 194 Torres, G. d'A.—Matte.                                      | 623 |
| 160 Cerqueira & Co.—Snuff, cigars, and cigarettes.                        | 623 | 195 Bley, J.—Matte.   | 623 |
|   |     | 196 Xavier, A. de Paula.—Matte.                                 | 623 |
|   |     | 197 Torres, M. d'A.—Matte.                                      | 623 |
|   |     | 198 Cercal, M. d'Oliveira.—Matte in leaves.                     | 623 |
|   |     | 199 Portugal, P. P. d'Asevedo.—Matte.                           | 623 |
|   |     | 200 Sepper, H.—Matte.   | 623 |
|   |     | 201 Cortez, P. de Siqueira.—Matte.                              | 623 |

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 12-14.

Agricultural Products, Land Animals.

- 202 Macedo, Tiburcio de.—Matte. 623  
 203 Diarson, J.—Matte. 623  
 204 Souza, Bento de.—Matte. 623  
 205 Constanca, Maria, & Sons.—Coffee and cocoa. 623  
 206 Correa, Pereira.—Matte. 623  
 207 Luz, Ferreira de.—Matte. 623  
 208 Camargos, Baron de.—Tea and coffee. 623  
 209 Province of Sancta Catharina.—Coffee. 623  
 210 Guimaraes, Ant.—Coffee from La Guayrá. 623  
 211 Friburgo & Sons.—Coffee. 623  
 212 Nobrega, J.—Coffee from Boa Esperança. 623  
 213 Munhoz, Caetano.—Matte. 623  
 214 Ayrosa, M. A.—Coffee. 623  
 215 Rocha-Leao, M. da.—Coffee. 623  
 216 Costa-Pereira, A. B. da.—Coffee from Piedade. 623  
 217 Gama, P. N. Nogueira da.—Coffee from Concordia. 623  
 218 Juparana, Baron of.—Coffee from Sta. Monica. 623  
 219 Rio-Novo, Viscountess of.—Coffee from Uniao. 623  
 220 Pripodi, Silvino.—Coffee. 623  
 221 Jardien, Gomes de.—Coffee. 623  
 222 Bella-Vista, Baron of.—Coffee. 623  
 223 Machado, Marcondes.—Coffee. 623  
 224 Vieira, Ant.—Coffee. 623  
 225 Magalhaes, Almeida.—Coffee. 623  
 226 Barros, Teixeira da.—Coffee. 623  
 227 Lima, Freitas.—Coffee. 623  
 228 Jordao, Miranda.—Coffee. 623  
 229 Costa, Maria da.—Coffee. 623  
 230 Camargo, Pompen de.—Coffee from Campinas. 623  
 231 Nogueira, Almeida.—Coffee from Campinas. 623  
 232 Jordao, R.—Coffee. 623  
 233 Vergueiro & Co.—Coffee. 623  
 234 Barros, Souza.—Coffee from S. Paulo. 623  
 235 Camargo, Santos.—Coffee and tobacco. 623  
 236 Amaral, Thereza do.—Coffee from Campinas. 623  
 237 Amaral, Francisco do.—Coffee from Campinas. 623  
 238 Nogueira, Ramos.—Coffee from S. Paulo. 623  
 239 Gaviao, Bernardo.—Coffee from S. Paulo. 623  
 240 Souza, Paula.—Coffee from S. Paulo. 623  
 241 Barros, Raphael de.—Coffee from S. Paulo. 623  
 242 C——, A. M.—Coffee from Iguape. 623  
 243 Jordao, Silverio.—Coffee. 623  
 244 Araguara, Baron de.—Coffee. 623  
 245 Tavares, Pinto.—Coffee. 623  
 246 Souza-Gueiroz, Baron de.—Coffee from S. Paulo. 623

- 247 Commission for the Province of St. Camarina.—Coffee. 623  
 248 Santos, Corneio dos.—Coffee. 623  
 249 Prados, Viscount of.—Coffee from Minas-Geraes. 623  
 250 Assis, Ferreira d'.—Coffee from Minas-Geraes. 623  
 251 Ribeiro, Silva.—Coffee from Minas-Geraes. 623  
 252 Alves, Assis.—Coffee from Minas-Geraes. 623  
 253 Freire, Manuel.—Coffee from S. Paulo. 623  
 254 Carvalho, Zacharias de.—Coffee from Sergipe. 623  
 255 Freire & Bros.—Coffee. 623  
 256 Breve, Souza.—Coffee. 623  
 257 Jaguary, viscount of. a Coffee. 623  
 b Decurs. 624  
 258 Rocha-Ferreira, D. da.—Tobacco. 623  
 259 Parana, D. V.—Tobacco. 623  
 260 Commission for the Province of Maranhao.—Coffee and tobacco. 623  
 261 Colony of Blumenau.—Tobacco and cigars. 623  
 262 Colony of Itajahy.—Twisted tobacco and mate. 623  
 263 Figueredo, Pinto de.—Twisted tobacco. 623  
 264 Province of Amazonas. a Medicinal plants. 621  
 b Cloves and tobacco. 623  
 265 Veiga.—Tobacco from Rio de Janeiro. 623  
 266 Oliveira, Coelho d'.—Tobacco from Minas-Geraes. 623  
 267 Province of Matto Grosso.—Tobacco and cigars. 623  
 268 Province of Rio-Grande-do-Sul.—Tobacco in leaf, and mate dust. 623  
 269 Pinto & Bro.—Leaf tobacco. 623  
 270 Testa, Umbellino.—Tobacco and coffee from Bahia. 623  
 271 Souza, Vasconcellos de.—Tobacco from Bahia. 623  
 272 Viotti.—Cigarettes. 623  
 273 Paulo Cordeiro, J.—Snuff. 623  
 275 Rocha, Correa da.—Snuff. 623  
 276 Novaes, Sonza.—Cigarettes. 623  
 277 Province of Bahia.—Cigars. 623  
 278 Agner, Luis.—Matte. 623  
 279 Martins, Luiz.—Tea. 623  
 280 Rodovalho, F.—Matte. 623  
 281 Fluminense Agriculture Institute.—Tea made from coffee-leaves. 623  
 282 Central Exportation Co.—Matte. 623

Land Animals.

- 284 Moreira, Dr. Nicolau J.—Butterfly. "Porta Espelhos" (*Attacus aureola lepiopetrous*).  
 285 Rezende, Luis de.—Silkworms and moths.  
 286 Wirmond, Ernesto E.—Collection of insects.

## Animal and Vegetable Products.

<b>Water Animals, Fish Culture, and Apparatus.</b>	
<b>287 Province of Parana.—Isinglass.</b>	646
<b>Animal and Vegetable Products.</b>	
<b>288 Province of Matto-Grosso.</b>	
<i>a</i> Quinine.	650
<i>b</i> Hides and furs.	652
<b>289 Agricultural Institute.</b>	
<i>a</i> Sage.	650
<i>b</i> Flour.	657
<i>c</i> Arrowroot.	658
<b>290 Province of Allagoas.</b>	
<i>a</i> Indigo-plant and vegetable dyes; caroba, quinine, etc.	650
<i>b</i> Hides and furs.	652
<i>c</i> Vegetable milk.	656
<b>291 Province of S. Paulo.</b>	
<i>a</i> Camomile.	650
<i>b</i> Hides and leather.	652
<i>c</i> Liquors, aguardente, etc.	660
<i>d</i> Chocolate.	667
<b>292 Commission General for the International Exhibitions, Rio de Janeiro.</b>	
<i>a</i> Turtle butter and cheese.	651
<i>b</i> Skins, hides, and leather.	652
<i>c</i> Wax.	654
<i>d</i> Preserved beef and tongues.	656
<i>e</i> Sugar.	659
<i>f</i> Wines and liquors.	660
<i>g</i> Vegetable oils.	662
<b>293 Juliano, Fr.—Cheese.</b>	651
<b>294 Carneiro, B. Rodriguez.—Cheese.</b>	651
<b>295 Ubatuba, Dr.</b>	
<i>a</i> Condensed milk.	651
<i>b</i> Extract of mint.	656
<b>296 Cabral, J. F. D.—Milk of Mangabeira.</b>	651
<b>297 Moraes Roseira, M. G. de.—Cheese.</b>	651
<b>298 Leao, Dr. A. E.—Cheese.</b>	651
<b>299 Director of Paranapanema.—Butter.</b>	651
<b>299<i>a</i> Oliveira, Ignacio de.—Glue.</b>	652
<b>300 District of Principe.</b>	
<i>a</i> Skins and hides.	652
<i>b</i> Wax.	654
<b>301 Andrade, J. C. Paes de.—Glue.</b>	652
<b>302 Ubatuba, D. M. P. S.—Tallow, lard, and oil.</b>	652
<b>303 Maciel, D. F.—Steer skins.</b>	652
<b>304 Cortez, P.—Steer hide.</b>	652
<b>305 Botelho, A. C. A.—Skin of a Boa aquatica.</b>	652
<b>306 Athayde, M. E. S.—Skins.</b>	652
<b>307 Feydel Son, I.—Tanned and raw hides.</b>	652
<b>308 Andrade, I. J.—Hides and skins.</b>	652
<b>309 Costa Eymoe &amp; Co.—Hides, leather, and soles.</b>	652
<b>310 Klippel &amp; Brother.—Hides and soles.</b>	652
<b>311 Perneta.—Stag-horns.</b>	652
<b>312 Colony of Blumenau.—Various products.</b>	652
<b>313 Province of Amazonas.—Hides and furs.</b>	652
<b>314 Province of Goyaz.—Hides, furs, and leather.</b>	652
<b>315 Province of Ceara.</b>	
<i>a</i> Hides and furs.	652
<i>b</i> Dried beef.	656
<i>c</i> Confectionery.	661
<b>316 Province of Rio Grande do Sul.</b>	
<i>a</i> Leather.	652
<i>b</i> Preserved tongue and beef.	655
<b>317 Province of Rio Grande do Norte.</b>	
<i>a</i> Oil and tallow.	651
<i>b</i> Powdered honey-wax.	654
<b>318 Province of Parana.</b>	
<i>a</i> Hides, furs, and ox-horns.	652
<i>b</i> Wax.	654
<i>c</i> Manioc flour and fecula.	657
<i>d</i> Aguardente from sugar-cane, and liquor from maté herb and quince.	660
<b>319 Long &amp; Co.—Wax.</b>	654
<b>320 Miro, D. Maria.—Wax.</b>	654
<b>321 Safarana, A. T.—Beeswax and wax candles.</b>	654
<b>322 Province of Goyaz.—Beeswax.</b>	654
<b>323 Araujo, J. Pereira de Sz.—Yellow wax.</b>	654
<b>324 Araujo, J. A. Vieira.—Honey.</b>	654
<b>325 Xavier, A. de Paula.—Honey.</b>	654
<b>326 Xavier, D. Leocadia de P.—Wax.</b>	654
<b>327 Mendes, J. Olinto.—Honey and wax.</b>	654
<b>328 Macedo &amp; Azeredo.—Wax.</b>	654
<b>329 Province of Ceara.—Sun-dried beef and confectionery.</b>	656
<b>330 Canosa, Rosalina R. Botelha.—Preserved vegetables.</b>	656
<b>331 Vasconcellos, F. P. de.—Preserved vegetables.</b>	656
<b>332 Castro, M. José de.—Sweetmeats.</b>	656
<b>333 Silva, Leal, &amp; Santos.—Preserves.</b>	656
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

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- 367 Carvalho & Oliveira.—Syrup of  
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- 368 Diaz, Isidoro.—Sugar and syrup. 659
- 369 Maua, Viscount of.—Refined sugar. 659
- 370 Desincourt.—Crystallized sugar. 659
- 371 Barros, Bernardino de.—Brown  
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- 372 Barros, Fernandes de.—Sugar. 659
- 373 Costa & Co.—Refined sugar. 659
- 374 Costa, Ribeiro de.—Sugar. 659
- 375 Souza, Alves de.—Sugar. 659
- 376 Vianna, Paula.—Sugar. 659
- 377 Boa-Viagem, Baron of.—Sugar. 659
- 378 Wanderley, Barros.—Sugar. 659
- 379 Villa-Franca, Baron de.—Sugar. 659
- 380 Leao, Souza.—Sugar. 659
- 381 Virgens, Bernardo da.—Sugar. 659
- 382 Bastos, Rodriguez.—Sugar. 659
- 383 Braga & Co.  
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- 384 Province of Bahia.  
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- 386 Castro, Ribeiro de.  
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- 387 Virgens, M. B. das.—Sugar. 659
- 388 Mansell, Carré, & Co.—Sugar. 659
- 389 Braga & Co.—Syrups. 659
- 390 Colony of Iataby.—Sugar-cane  
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- 391 Braga & Brother.—Brandy, liquors,  
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- 392 Vellez Perdigao, D.—Alcoholic  
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- 393 Freyung, Otto.—Liquors. 660
- 394 Belache.—Liquors. 660
- 395 Bella Vista, Baron of.—Sugar-cane  
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- 396 Amaral Raposo, J. do.—Liquors. 660
- 397 Carreira, F. L.—Wines and bran-  
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- 398 Carneiro, F. Lucas.—Pao wine. 660
- 399 Bastos & Camacho.—Liquors and  
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- 400 Teixeira, A. de A.—Tonic liquors. 660
- 401 Bouilly, José.—Pao wine. 660
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- 404 Falcão, Paulino P.—Sugar-cane  
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- 405 Souza, M. I. M. de.—Brandy and  
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- 406 Mendes, J. Olinto.—Liquor. 660
- 407 Meneses, B. A. de.—Quince liquor. 660
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- 409 Castelnova, T.—Absinthe. 660
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- 413 Araujo, Ignacio de.—Liquors. 660
- 414 Oliveira, Roiz de.—Liquors. 660
- 415 Carvalho, Leitao de.—Laranginha  
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- 416 Falcão, Piri.—Aguardente. 660
- 417 Raposo, Amaral.—Wines and  
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- 418 Pinto, Oliveira.—Aguardente from  
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- 419 Azevedo, Pereira de.—Aguardente. 660
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- 423 Pimenta, Mattos.—Hesperidina-  
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- 430 Silveira, N.—Aguardente. 660
- 431 Pinheiro, Thomas.—Laranganha. 660
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- 433 Bella-Vista, Baron of.—Aguardente. 660
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- 435 Pereira, Esteveao.—Laranganha, aguardente from sugar-cane. 660
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- 445 Sardinha.—Wine. 660
- 446 Pinho, Francisco do.—Chocolate. 661
- 447 Leao, Hermelino de.—Farina biscuit. 661
- 448 Murici, Dr. Leao, Ermelindo de.—Tapioca biscuits. 661
- 449 Silva, Leal, & Santos.—Vermicelli. 661
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- 451 Pinho, Francisco do.—Chocolate. 656
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- 453 Cohin, Elieser.—Oil of copahiba. 662
- 454 Cavalcante, J. B.—Oil of andiroba. 662
- 455 Barbôsa, J. E. C.—Oil of batiputa. 662
- 456 Braga, J. F. C.—Oil of copahiba. 662
- 457 Veiga, J. A. da.—Oil of togo. 662
- 458 Silva, T. R. da.—Cocoanut oil. 662
- 459 Jorge, M. F. A.—Cocoanut oil. 662
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- 462 Falcao, Dias C.—Oils. 662
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- 464 Vyeira, M. L.—Cocoanut oil. 662
- 465 Vyeira, S. A.—Andiroba oil. 662
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- 476 Province of Parahyba.—Cotton. 66
- 477 Province of Rio Grande do Norte.—Cotton. 66
- 478 C—, J. T. A.—Cotton from S. Paulo. 66
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- 481 B—, A. A.—Cotton from S. Paulo. 66
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- 483 Province of Alagoas.—Vegetable wool. 66
- 484 Province of Pernambuco.  
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- 490 Athayde, M. E. Souza.—Cotton on the stem. 66
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- 492 Soares, O. J.—Cotton. 66
- 493 Merch, Maximiliano.—Cotton. 66
- 494 Paes Leme, Rosalina.—Cotton. 66
- 495 Silva, F. J. Xavier da.—Cotton. 66
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- 498 Brava, Fray Luiz da.—Cotton. 66
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- 505 J. C. A., Limeira.—Cotton. 665
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- 507 Province of Pernambuco.  
 a Vegetable fibres. 666  
 b Bristles. 669
- 508 Province of Sancta Catharina.—Tucum thread and paina. 666
- 509 Commission for Votureava.—Isca de Roceira. 666
- 510 Province of Amazonas.—Piassaba fibres. 666
- 511 Barros, L. Gomes de.—Cipo matta gente for withes. 666
- 512 Muricy, Dr.—Cipo florao. 666
- 513 Leao, Rego Barros S.—White embira. 666
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- 515 Lacerda, A. F. de.—Plattaba fibres. 666
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- 517 Barros, A. Aguiar de.—Vegetable fibres. 666
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- 527 Ferreira & Co., Gaspar P.—Fibres of the umbauba tree. 666
- 528 Bomfin, F. Theodoro do, and others.—Vegetable fibres. 666
- 529 Paes Leme, Rosalina.—Flax. 666
- 530 Keller, Philippe.—Flax. 666
- 531 Kalden, Baron of.—Prepared flax. 666
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- 533 Barros, P. Fernandes de.—Fibres of tucum. 666
- 534 Leao, E. de.—Flax. 666
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- 545 Schimmelpfeng, A.—Wool. 667
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- 553 Morvira, Nicolau J.—Cocoons. 668
- 554 Moreira, Nicolau.—Silk-worms. 668
- 555 Reis, Luciano.—Silk in the cocoon and reeled. 668
- 556 Resende, Luiz de.—Silk-worms, cocoons, reeled silk, and apparatus for reeling silk. 668
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- 558 Antunes, J. A.—Machine for preparing coffee. 674
- 559 Blanchet, J.—Small plows. 670
- 560 Province of S. Paulo.—Plows. 670
- 561 Province of Parana.—Plows. 670
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- 562 Province of Amazonas.—Guano. 681
- 563 Muricy & Leao.—Guano. 681
- Chemicals.**
- 564 Yeiga, F. Apriego da.—Pharmaceutical products. 200
- 565 Lepage, F. J.—Pharmaceutical products. 200
- 566 Dias, Duarte.—Drugs. 200
- 567 Province of Ceara.—Medicinal oils. 200
- 568 Alves, Leao.—Pharmaceutical preparations. 200
- 569 Dias, C. Falcon.—Pharmaceutical preparations. 200
- 570 Braga, jr.—Pharmaceutical preparations. 200
- 571 Military Hospital of Rio de Janeiro.—Pharmaceutical preparations. 200
- Fabrics of Vegetable, Animal, or Mineral Materials.**
- 572 Province of Amazonas.  
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# ARGENTINE REPUBLIC.

(West of West Aisle, Columns 9 to 13.)

## Arboriculture and Forest Products.

### Arboriculture and Forest Products.

- 1 Commission of the Chaco Argentine Territory.
  - a Collection of natural and polished woods. 600
  - b Indigo plant and curupai bark. 60a
- 2 Gallegos, Miguel, Chaco Argentine Territory.—A cane; samples of wood. 600
- 3 Aguilar, Francisco D., Province of San Juan.—Flowers made from carob tree wood; chica wood; collection of woods to be presented to the National Department of Agriculture. 600
- 4 Laugan, Juan, Province of San Juan.—Collection of woods. 600
- 5 Provincial Commission, Province of Santa Fé.
  - a Collection of woods, polished lignum-vitæ. 600
  - b Laurel bark and tanning materials. 60a
- 6 Echevarria, Cecilio, Province of Santa Fé.
  - a Collection of woods; polished samples. 600
  - b Dyes. 60a
- 7 Provincial Commission, Province of Cordoba.
  - a Collection of woods; polished samples. 600
  - b White carob tree and molle seed. 60b
- 8 Cornejo, John, Province of Salta.
  - a Cherimoya seed. 600
  - b Palo Santo resin. 60b
- 10 Provincial Commission, Province of Salta.
  - a Collection of seeds and woods. 600
  - b Dyeing and tanning materials. 60a
- 11 Villar, Salvador, Province of Jujui.
  - a Collection of woods. 600
  - b Secondo and pastilla bark. 60a
  - c Palm, lignum-vitæ, quina-quina and pacara seeds, etc. 60b
- 12 Provincial Commission, Province of Catamarca.
  - a Collection of woods. 600
  - b Dyeing and tanning materials. 60a
  - c Visco and lignum-vitæ seeds, etc. 60b
- 13 Provincial Commission, Province of La Rioja.
  - a Collection of woods. 600
  - b Tar, carob resin, and Lata incense. 60b
  - c Yareta plant, containing much resin. 60a
  - d Collection of seeds. 60b
- 14 Cecenarro, Vicente, Province of Catamarca.—Viscote wood. 600
- 15 Lafone, Quevedo, Samuel Province of Catamarca.—Black carob wood. 600
- 16 Andalgalá Commission, Province of Catamarca.
  - a Cactus. 600
  - b Dyeing and tanning products. 60a
- 17 Provincial Commission, Province of Tucuman.
  - a Samples of wood in logs, partly polished. 600
  - b Cebil bark for tanning, Socondo. 60a
- 18 Provincial Commission, Province of Mendoza.
  - a Samples of wood in logs. 600
  - b Chanar bark for cleaning cloth and Retortuno for tanning. 60a
  - c Gums and resins. 60b
- 19 Videla, Victor, Province of San Luis.
  - a Collection of woods; polished samples. 600
  - b Barks for tanning. 60a
- 20 Provincial Commission, Province of Corrientes.—
  - a Collection of polished and unpolished woods. 600
  - b Bark of black laurel and curupay tree, used for tanning, etc. 60a
  - c Peanuts, and creeping plant called curuhay guazu. 60b
- 21 Roibon, Enrique, Province of Corrientes.—Caroba wood. 600
- 22 Resoagli, Luis, Province of Corrientes.—Collection of woods; boxes. 600
- 22a River Bermejo Navigation Co., Chaco, Argentine Territory.—Pale santo wood. 600
- 23 Bella Vista Sub-Commission, Province of Corrientes.
  - a Collection of woods. 600
  - b Orange seed, chichita, suspiros, peanuts. 60b
- 24 Ferré, Vicente, Province of Corrientes.—Sticks of different woods. 600
- 25 National Department of Agriculture, Province of Corrientes.—Samples of Urunday wood. 600
- 26 Justice of the Peace of Ensenada, Province of Buenos Ayres.—Collection of woods. 600
- 27 Valdes, Emiliano, & Cipriano, Province of Buenos Ayres.
  - a Collection of curromamel and other woods. 600
  - b Mushrooms grown on willow bark. 60a
- 28 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Beehives made of black acacia. 600
- 29 Roibon, Federico, Province of Corrientes.—Pictures of trees in water-colors. 60a
- 30 Boero, José, & Poletti, Antonio, Province of Buenos Ayres.—A rack made of twenty-five kinds of wood. 60a
- 31 Iniguez, Manuel, Province of Buenos Ayres.—Specimens of woods. 600

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.



Arboriculture, Forest, and Agricultural Products.

- 32 Provincial Commission, Province of Santiago del Estero.  
a Collection of woods in logs. 600  
b Collection of dyeing woods, etc. 602
- 33 Provincial Commission, Province of Entre-Rios.—Samples of polished woods. 600
- 34 Elola, P., Province of Entre-Rios.—Collection of woods. 600
- 35 Berdue, Martin, Province of Entre-Rios.—Box made of different woods. 600
- 36 Parana Commission, Province of Entre-Rios.  
a Collection of woods. 600  
b Roots and barks; cochineal and dyeing materials. 602  
c Turpentine. 603
- 37 Roman, José, Province of Buenos Ayres.—Carob and mandubay wood. 600
- 38 Garrigos, J. M., Province of Buenos Ayres.—Collection of woods. 600
- 39 Gallino, J. A., Province of Entre-Rios.—Collection of woods. 600
- 40 Echebehere, Pedro, Province of Buenos Ayres.—Collection of woods. 600
- 41 Pontes, Vicente, & Neyra, Sisto, Province of Buenos Ayres.—Collection of woods. 600
- 42 Calderon, Pedro, Province of Buenos Ayres.—Collection of woods. 600
- 43 Gonzales, Meliton, Province of Buenos Ayres.—Collection of woods. 600
- 45 Provincial Commission, Province of San Luis.  
a Dyeing and tanning products. 602  
b Gum and resin. 603
- 46 Medina, Luis R., Province of Catamarca.  
a Visco and coco woods. 600  
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- 47 Hurley, Tomas, Province of Catamarca.—Dyeing products. 602
- 47a Vidal, M. A., Province of San Juan.—Quillo and retortuno for dyeing. 602
- 47b Caecedo, A., Province of San Juan.—Retortuno for dyeing. 602
- 47c Correa, B., Province of San Juan.—Retortuno root for dyeing. 602
- 47d Rodriguez, V., Province of San Juan.—Retortuno root for dyeing. 602
- 47e Poblete, F., Province of San Juan.—Romerrillo. 602
- 48 Sievert, Max, Province of Salta.  
a Silk and wool dyed with the product of the lapacho tree; other dyeing products. 602  
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- 49 Gonzales, Joaquin, Province of La Rioja.  
a Sacanza and roots for dyeing. 602  
b Guano, etc. 603
- 49 Wurffels, Gustavo, Province of La Rioja.  
a Roots for tanning and dyeing, cleansing substances replacing soap, jume for making soap. 602  
b Cotton-seed. 605
- 49 Gelos, Martin, Province of La Rioja.—Dyeing and tanning products. 602
- 49 Fava, Carlos, Province of Corrientes.—Cochineal and indigo-plant. 602
- 53 Lopez, Feliciano, Province of Corrientes.—Mbui plant, for dyeing silk and wool. 602
- 54 Pujol, Eliza, Province of Corrientes.—Root of isypoyu, for dyeing; coloring roots. 602
- 55 Poisson, J. T., Province of Corrientes.—Urucu-seed, for dyeing. 602
- 56 Ritach, Felipe, Province of Mendoza.—Roots for tanning. 602
- 57 Ocampo & Acosta, Province of Cordoba.—Bark, seed, and other products for tanning. 602
- 59 Ubach de Colon, José, Province of Entre-Rios.—Sarsaparilla, carob-bark, and other tanning and dyeing products. 602
- 60 Sub-commission of the Department of Diamante, Province of Entre-Rios.—Cochineal, carob-bark, and other dyeing and tanning materials. 602
- 61 Soler, Ventura, Province of Entre-Rios.—Laurel and carob-bark and other dyeing and tanning materials. 602
- 62 Rodriguez, Severo, Province of San Juan.  
a Resins of chilca, etc. 603  
b Carob and myrrh seed. 603
- 63 Balban, Nonasca, Province of Catamarca.—Carob-resin and black resin. 603
- 64 Flores, Nicanor, Province of Salta.—Tar. 603
- 65 Solá, Juan, Province of Salta.—Yareta, a resinous plant. 603
- 66 Riao, Petrona, Province of Catamarca.—Cherimolia seed. 605
- 66a Flemming, Miguel, Province of Salta.—Tipa and tarco seed. 605
- 67 Machado, Ruben, Province of Catamarca.—Mistol and carob tree seed. 605
- 67a Goyri, Bernardo, Province of Entre-Rios.—Samples of seeds. 605
- 68 Ponce, Isidora, Province of Catamarca.—Molle seed. 605
- 69 Esparsa, José, Province of Catamarca.—Seed of acacia aroma, for dyeing and medicinal purposes. 605
- 70 Miranda, José, Province of Catamarca.—Acacia for feed, and for hedges. 605
- 71 Albarez, Francisco, Province of La Rioja.—Walnuts. 603
- 72 Larrachona, Pedro, Province of La Rioja.—Malingasta nuts. 605
- 73 Chaves, Crisologo, Province of La Rioja.—Tusca seeds. 605
- 74 Peluffo, Vicente, & Co., Province of Buenos Ayres.—Collection of seeds. 605

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- 75 Imaz Bros., Province of Buenos Ayres.—Wheat. 620
- 76 Unzué, Saturnino, Province of Buenos Ayres.—Wheat and corn. 620
- 77 Grego, A., Province of Buenos Ayres.—Wheat. 620
- 78 Diaz, Eugenio, Province of Buenos Ayres.—Wheat. 620
- 79 Traverso, Juan, Province of Buenos Ayres.—Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.

## Agricultural Products.

- |   |     |   |     |
|---|-----|---|-----|
| 80 Bruno, Domingo, Province of Buenos Ayres.—Wheat.   | 620 | 108 Rodriguez, Victor, Province of San Juan.—Junquille grass.               | 620 |
| 80a Vidal, Augustin, Province of Buenos Ayres.—Wheat.                                       | 620 | 109 Sarmiento, Juan L., Province of San Juan.—Yellow and white corn; wheat. | 620 |
| 81 Alonso, Manuel, Province of Buenos Ayres.—Wheat.   | 620 | 110 Correa, Benidicto, Province of San Juan.—Corn and wheat.                | 620 |
| 82 Ibarra, Venero, Province of Buenos Ayres.—Wheat.   | 620 | 111 Maso, Julian, Province of San Juan.                                     | 620 |
| 83 Provincial Commission, Province of Buenos Ayres.—Wheat.                                  | 620 | a White and red corn.   | 620 |
| 83a Cornejo, John, Province of Salta.—Sugar cane.   | 620 | b Lima beans.   | 621 |
| 84 Bertolate, G., Province of Buenos Ayres.—Wheat.  | 620 | 112 Amañil, Benigno, Province of San Juan.—Yellow corn.                     | 620 |
| 85 Buffa, Agustín, Province of Buenos Ayres.—Wheat.   | 620 | 113 Frias, Salvador, Province of San Juan.—White corn, barley, wheat.       | 622 |
| 86 Lanzon, N., Province of Buenos Ayres.—Wheat.   | 620 | 114 Vidal, Marco A., Province of San Juan.—Red corn, white wheat.           | 620 |
| 87 Malvichini, N., Province of Buenos Ayres.—Wheat.   | 620 | 115 Jones, Fabian, Province of San Juan.—Red corn; wheat.                   | 620 |
| 88 Costa, Bartolo, Province of Buenos Ayres.—Wheat.   | 620 | 116 Aguilar, Juan M., Province of San Juan.—Red corn; wheat.                | 620 |
| 89 Justice of the Peace of Juarez, Province of Buenos Ayres.—Wheat.                         | 620 | 117 Ruiz, Clemente, Province of San Juan.                                   | 620 |
| 90 Justice of the Peace of Patagones, Province of Buenos Ayres.—Wheat, barley, and corn.    | 620 | a Red corn, wheat.  | 620 |
| 91 Guerin, N., Province of Buenos Ayres.—Wheat.   | 620 | b Beans.  | 621 |
| 92 Mildred, Juan, Province of Buenos Ayres.   | 620 | c Lucern seed.  | 624 |
| a Wheat and barley.   | 620 | 118 Jofré, Roman, Province of San Juan.—Red corn.                           | 620 |
| b Lucern seed.  | 624 | 119 Rufino, Geronimo C., Province of San Juan.                              | 620 |
| 93 Justice of the Peace of Bahia Blanca, Province of Buenos Ayres.—Wheat, barley, and corn. | 620 | a White corn.   | 620 |
| 94 Burgos, R., Province of Buenos Ayres.—Wheat.   | 620 | b Beans and peas.   | 621 |
| 95 Acuña, Francisco, Province of Buenos Ayres.—Barley and corn.                             | 620 | 120 Figueras, Tomas, Province of San Juan.—White corn.                      | 620 |
| 96 Peluffo, Angel, Province of Buenos Ayres.  | 620 | 121 Ruiz, G., Province of San Juan.—White corn.                             | 620 |
| a Barley.   | 620 | 122 Balaguer, Tristan, Province of San Juan.—Corn.                          | 620 |
| b Lima beans.   | 621 | 123 Rosa, Rosauro de la, Province of San Juan.                              | 620 |
| c Seeds; hemp and flax, lucern, lentils, palmacristi, etc.                                  | 624 | a Corn.   | 620 |
| 97 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Corn and grasses.       | 620 | b Lucern seed.  | 624 |
| 98 Arce, Invenio, Province of Buenos Ayres.—Corn.   | 620 | 124 Baca, John, Province of San Juan.—Corn, wheat.                          | 620 |
| 99 Justice of the Peace of Zarate, Province of Buenos Ayres.—Corn.                          | 620 | 125 Lloveras, Lisandro, Province of San Juan.—White corn.                   | 620 |
| 100 Martinez, Hercules, Province of Buenos Ayres.—Corn.                                     | 620 | 126 Cordero, Pedro J., Province of San Juan.                                | 620 |
| 102 Valdez, Emiliano, Province of Buenos Ayres.—Corn.                                       | 620 | a White corn.   | 620 |
| 104 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Fresh beans; lentils.  | 620 | b Peas, barley, and wheat.  | 621 |
| 105 Valdes, Emiliano & Cipriano, Province of Buenos Ayres.                                  | 620 | c Lucern seed.  | 624 |
| a Barley, sugar-cane, straw, etc.   | 620 | 127 Castro, Pedro, Province of San Juan.—White corn.                        | 620 |
| b Garlic.   | 621 | 128 Bates, Benjamin, Province of San Juan.                                  | 620 |
| 106 Galarani, Carlos, Province of Buenos Ayres.   | 620 | a Wheat.  | 620 |
| a Flax, barley, corn, wheat, maize, and cattle-feed.  | 620 | b Canary seed.  | 624 |
| b Beans.  | 621 | 133 Bodarata, Juan, Province of San Juan.—Barley.                           | 620 |
| 107 Government of the Province of San Juan.—Grasses, straw, maté herb, etc.                 | 620 | 134 Ramirez & Co., Province of San Juan.                                    | 620 |
|   |     | a Barley, white corn.   | 620 |
|   |     | b Lima beans, peas, etc.  | 621 |
|   |     | 137 Day, Frederica, Province of San Juan.—Wheat.                            | 620 |
|   |     | 138 Muñoz, Brancisco, Province of San Juan.—Wheat.                          | 620 |
|   |     | 139 Ledesma, H., Province of San Juan.—Wheat.                               | 620 |

Agricultural Products.

- 140 Provincial Commission, Province of Salta.  
a Corn, peanuts, barley, wheat, melons, sugar-cane, etc. 620  
b Tobacco. 623  
c Onion and lucern seed. 624
- 141 Flemming, Miguel, Province of Salta.  
a Wheat and corn. 620  
b Potatoes. 622
- 142 Toro, Ignacio, Province of Salta.—Wheat, barley, corn, and lucern seed. 620
- 143 Gonzalez, Joaquin, Province of La Rioja.—Corn for flowers, and also for flour, wheat, lucern seed. 620
- 144 Davila, Guillermo, Province of La Rioja.  
a White corn, sugar corn, wheat. 620  
b Lima beans. 621
- 145 Larrohona, Pedro, Province of La Rioja.  
a Corn, wheat, and barley. 620  
b Lima beans. 621
- 146 Villafane, Nicolasa, Province of La Rioja.  
a Corn. 620  
b Lima beans. 621
- 147 Illaños, José Manuel, Province of La Rioja.—White corn, barley, wheat. 620
- 148 Provincial Commission, Province of La Rioja.  
a Corn, wheat, barley. 620  
b Lima beans. 621  
c Onion seed. 624
- 149 Gonzalez, Ventura, Province of La Rioja.—Wheat. 620
- 152 Alvarez, Francisco, Province of La Rioja.  
a Wheat in stalks. 620  
b Lima beans. 621
- 153 Muro, Froilan, Province of Catamarca.  
a Corn. 620  
b Beans and peas. 621
- 154 Diaz, Ramon, Province of Catamarca.  
a Wheat. 620  
b Lima beans. 621
- 155 Artaza, Santiago, Province of Catamarca.  
a Wheat. 620  
b Beans and peas. 621
- 156 Provincial Commission, Province of Catamarca.  
a Corn, wheat, barley, and grasses. 620  
b Lima beans. 621  
c Indian pepper, tobacco, cigars, etc. 623
- 157 Molina, José, Province of Catamarca.  
a Corn, wheat. 620  
b Beans. 621
- 158 Vega, G., Province of Catamarca.—White corn. 620
- 159 Artaza, Manuel, Province of Catamarca.—Corn, etc. 620
- 160 Miranda, José A., Province of Catamarca.—White corn. 620
- 161 Sub-commission of the Department of Ancasti, Province of Catamarca.  
a Corn. 620  
b Lima beans, etc. 621
- 162 Sub-commission of the Department of Alto, Province of Catamarca.—White corn. 620
- 163 Alvarez, S., Province of Catamarca.—Wheat. 620
- 164 Ahameda, B., Province of Catamarca.—Wheat. 620
- 165 Riso, Ventura, Province of Catamarca.—Geneva wheat. 620
- 166 Herrera, Miguel, Province of Catamarca.—Wheat. 620
- 167 Aguilar, Olegaria, Province of Catamarca.—Wheat. 620
- 168 Tula, Nabor, Province of Catamarca.—Wheat, lucern seed. 620
- 169 Sub-commission of Belen, Province of Catamarca.  
a Corn, wheat. 620  
b Beans. 621
- 170 Sub-commission of the Department of Pachin, Province of Catamarca.  
a Small corn, wheat, Geneva seed, white and yellow corn. 620  
b Lima beans. 621
- 171 Sub-commission of the Department of Santa Maria, Province of Catamarca.—Corn and wheat. 620
- 172 Alric, Antonio, Province of San Luis.—Corn, wheat, and barley. 620
- 173 Provincial Commission, Province of San Luis.  
a Corn, wheat, barley, and cattle feed. 620  
b Beans. 621
- 174 Arrondo, Agustin, Province of Entre-Rios.—Wheat. 620
- 175 Parafia Commission, Province of Entre-Rios.  
a Corn, etc. 620  
b Beans and peas. 621  
c Potatoes. 623  
d Tobacco. 623
- 176 Gualaguaychu Sub-commission, Province of Entre-Rios.—Wheat, corn, etc. 620
- 177 Goyri, B., Province of Entre-Rios.—Corn. 620
- 178 Balugera, Domingo, Province of Entre-Rios.—Rice and corn. 620
- 179 Crespo, Manuel, Province of Entre-Rios.—Paraná wheat. 620
- 180 Uruguay and Paraná Commission, Province of Entre-Rios.  
a Collection of seeds and cereals. 620  
b Collection of seeds. 624
- 181 Meyer, Edmundo, Province of Santa Fé.—Wheat and barley. 620
- 182 Ceretti, L., Province of Santa Fé.—Wheat. 620
- 183 Lubary, T., Province of Santa Fé.—Wheat. 620
- 184 Colonia San Carlos Sub-commission, Province of Santa Fé.—Barley. 620
- 185 Nickisch, Manuel, Province of Santa Fé.  
a Corn. 620  
b Lima beans, etc. 621
- 186 Iturrappe Co., Province of Santa Fé.—Wheat. 621
- 187 Bergeré, Dr., Province of Santa Fé.—Peanuts. 620
- 188 Blanchaud, Miguel, Province of Santa Fé.  
a Peanuts, corn, and wheat. 620  
b Chick-pea. 621  
c Leaf tobacco. 623
- 189 Beken, Federico, Province of Santa Fé.—Wheat. 620
- 190 Schuling, German, Province of Santa Fé.—Corn. 620

## Agricultural Products.

- 191 Pillier, N., Province of Santa Fé.—Wheat. 620
- 192 Carignano Bros., Province of Santa Fé.—Wheat. 620
- 193 Valvas, Carlos, Province of Santa Fé.—Wheat. 620
- 194 Provincial Commission, Province of Santa Fé.—Dry lucern, corn. 620
- 195 Frischi, Cristino, Province of Santa Fé.—Wheat. 620
- 196 Arminchiardi, Juan, Province of Mendoza.—Wheat. 620
- 197 Fourcade, Pedro, Province of Mendoza.—Wheat. 620
- 198 De la Cruz Videla, Juan, Province of Mendoza.—Wheat. 620
- 199 Roman, Medardo, Province of Mendoza.  
a Wheat. 620  
b Lima beans. 621
- 200 Sanchez, Modesto, Province of Mendoza.—White Lima beans. 621
- 201 Provincial Commission, Province of Mendoza.—Corn. 620
- 202 Agricultural Villa of Mendoza, Province of Mendoza.  
a Corn and wheat. 620  
b Lima beans and peas. 621
- 203 Provincial Commission, Province of Jujui.  
a Rice, corn, and wheat. 620  
b Indian pepper, tobacco. 623
- 204 Provincial Commission, Province of Tucuman.  
a Corn, rice, wheat. 620  
b Sweet potatoes, etc. 622  
c Tobacco, cigars, etc. 623
- 205 Commission of the Chaco Argentine Territory.  
a Corn, sugar-cane, espartillo grass. 620  
b Tapoyua, used as a food; mandioca, for making starch and chipa bread, etc. 622  
c Flowers made of saffron; tobacco. 623
- 206 Harbor-master, Chaco Argentine Territory.—Sugar-cane plant, espartillo grass, etc. 620
- 207 Ferré, Vicente, Province of Corrientes.—Sugar-canes. 620
- 208 Commission of the Province of Corrientes.  
a Sugar-cane. 620  
b Mandioca. 622  
c Tobacco, maté herbs, etc. 623
- 209 Bella Vista Sub-commission, Province of Corrientes.  
a Corn. 620  
b Popi from mandioca. 622  
c Tobacco. 623
- 210 Appleyard, Juan B., Province of Corrientes.  
a Rice. 620  
b Maté herbs. 623
- 211 Provincial Commission, Province of Santiago del Estero.  
a Wheat. 620  
b Sweet potatoes. 622
- 212 Michelond, Miguel, Province of Santa Fé.—Peach sugar-cane. 620
- 213 Provincial Commission, Province of Cordoba.  
a Wheat. 620  
b Peas and beans. 621  
c Sweet potatoes. 622  
d Cigars, pepper, tobacco, mustard, etc. 623
- 214 Ferrando, Juan, Province of Entre Rios.—Lima beans and peas. 620
- 214a Aubone, Daniel, Province of Santa Juan.—Beans. 621
- 215 Escobar, Juan de Dios, Province of San Luis.—Lima beans. 621
- 215a Farias, José A., Province of Santa Juan.—Beans, peas, etc. 62
- 216 Pouyet, Miguel, Province of Mendoza.—Collection of garden-seeds, bean peas, etc. 62
- 216a Davila, Bonifacio, Province of La Rioja.—Beans. 62
- 217 Denner, Santiago, Province of Santa Fé.  
a Lima beans. 62  
b Tobacco seed. 62a
- 217a Bascufian, Francisco, Province of La Rioja.  
a Beans. 62  
b Lucern seed. 62a
- 218 Cordoba, Demetrio, Province of Catamarca.—Lima beans. 62
- 219 Sans, N. Roca, Province of Mendoza.—Potatoes. 62
- 220 Audielo, M., Province of Buenos Ayres.—Potatoes. 62
- 221 Polá, Juan, Province of Salta.—Potatoes, red and sweet oca oxalis. 62
- 222 Delgado, Daniel, Lamincha, Province of Catamarca.—Potatoes. 62
- 223 Maxit, José, Province of Entre Rios.—Potatoes. 62a
- 224 Pfeiffer, Pedro, Province of Santa Fé.—Potatoes. 62
- 225 Rizo, Isidoro, Province of Catamarca.—Coffee. 62
- 226 Bustamante, O., Province of Catamarca.—Tobacco and cut maize leaves for cigarettes. 62
- 226a Appleyard, T. B., Province of Corrientes.—Tobacco. 62
- 227 Barros, Sebastian, Province of Catamarca.—Cumin and anise. 62
- 227a Coudert, A., Province of Buenos Ayres.—Cigarettes. 62
- 228 Augier, Uladislao, Province of Catamarca.—Cumin seed. 62
- 229 Alvarez, Cruz, Province of Catamarca.—Cumin seed. 62
- 230 Arrillaga, Javier, Province of Corrientes.—Maté herb packed in tape skin. 62
- 230a Esquivel, Peter A., Province of Corrientes.—Cigars. 62
- 231 Vera, Matilde, Province of Corrientes.—Pigeons stuffed with maté herbs packed in wolf skins. 62
- 232 Alegre, John, Province of Corrientes.—Maté. 62
- 233 Belta, Valentin, & Co., Province of Santa Fé.—Tobacco, coffee, pepper, cumin, cumin, cloves, chocolate. 62
- 234 Silva, F., Province of Santa Fé.—Arazá (a spice). 62
- 234a Cobo, L., Province of Tucuman.—Tobacco. 62
- 235 Aragon, S., Province of Santa Fé.—Tobacco. 62
- 237 Invernice, Pedro, Province of Santa Fé.—Spurge. 62

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- 238 Granada, Salvador, Province of Cordoba.—Chocolate. 623
- 239 Villar, Salvador, Province of Jujui.—Coffee. 623  
     Castor beans, etc. 624
- 240 Carrillos, Pablo, Province of Jujui.—Tobacco. 623
- 241 Baigorra, José, Province of Jujui.—Wild cocoa, etc. 623
- 242 Burela, Serapio, Province of Salta.—Tobacco. 623
- 243 Davalos, Benjamin, Province of Salta.—Tobacco leaves. 623
- 244 Waile, S., Province of Salta.—Cigarettes. 623
- 245 Zolesi, Nicolas, Province of Buenos Ayres.—Snuff and cigars. 623
- 246 Lago & Son, Antonio, Province of Buenos Ayres.—Cigarettes. 623
- 247 Andes, Mendez M. de, Province of Buenos Ayres.—Cigarettes. 623
- 248 Daumas, J., & Co., Province of Buenos Ayres.—Cigarettes and tobacco. 623
- 249 Coll, Vitoria, & Co., Province of Buenos Ayres.—Cigarettes. 623
- 250 Schroeder, Nicolas, Province of Buenos Ayres.—Leaf tobacco and cigars. 623
- 251 Lista, Manuel, & Schröder, T., Province of Buenos Ayres.—Leaf tobacco. 623
- 252 Casanoo, Juan, Province of Santa Fé.—Flax and spurge seed. 624
- 253 Peluffo, Vicente, & Co., Province of Buenos Ayres.—Seeds. 624
- 255 Arenales, A. M. Alvarez de, Province of Buenos Ayres.—Jerusalem artichoke seed. 624

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- 258 Provincial Commission, Province of Mendoza.—Collection of birds. 635
- 259 Lemos, Abraham, Province of Mendoza.  
     a Hawk, woodpecker, wild sandpiper. 635  
     b Lynx, stuffed matoaco, etc. 637  
     c Lizard, scorpions, insects, etc. 638
- 260 Nuñez, Santos, Province of Catamarca.—Humming-bird. 635
- 261 Franco, Luis A., Province of Catamarca.—Humming-bird. 635
- 262 Poblete, Tiburcio, Province of San Juan.—Ostrich skin. 635
- 263 Provincial Commission, Province of San Juan.—Prepared skins of tern, partridge, chimango, crow birds, etc. 635
- 264 Dominguez, José, Province of San Juan.—Prepared skins of banduria. 635
- 265 Rosario Tala, Sub-commission, Province of Entre-Rios.—Stuffed gull and quail. 635
- 267 Provincial Commission, Province of San Luis.  
     a Nest of hornoro. 635  
     b Lizard skin. 638
- 268 Provincial Commission, Province of Catamarca.  
     a Matoaco and quinquicho shells. 635  
     b Wasp's nest. 638
- 269 Echevets, Gabriel, Province of Buenos Ayres.—A stuffed wildcat of Balcarce. 637

- 269a Goyena, John, Province of Buenos Ayres.—Stuffed toad and rabbit. 637
- 269b Rio, T. R. del, Province of Buenos Ayres.—Toads. 637
- 269c Fuente, D. G. de la, Province of Buenos Ayres.—Toads. 637
- 270 Gonzalez, Juan, Province of Buenos Ayres.—Polecat and small fox, stuffed. 637
- 271 Valdés, Emiliano & Cipriano, Province of Buenos Ayres.—Stuffed rat. 637
- 272 Rosario Tala, Sub-commission, Province of Entre-Rios.—Stuffed polecat. 637
- 274 Echavarria, Cecilio, Province of Santa Fé.—Vipers. 638
- 275 Commission of the Chaco Argentino Territory.—Rattlesnake and coral viper. 638
- 276 Provincial Commission, Province of Corrientes.—Curiyú viper's skin. 638
- 277 Fernandez, Severo, Province of Corrientes.—Viper skins. 638
- 278 Fava, Carlos, Province of Corrientes.—Viper skins. 638
- 279 Poisson, Juan T., Province of Corrientes.—Viper's skin. 638
- 280 Bella Vista Sub-commission, Province of Corrientes.—Spiders and their silk in cocoons, snakes. 638
- 281 Gonzalez, Pedro J., Province of Corrientes.—Dissected guana (South American lizard). 638
- 282 Diaz, Eulogia, Province of Corrientes.—Stuffed viper. 638
- 283 Jurado, G. Doraliza de, Province of San Luis.—Black wasp's comb. 638
- 284 Escobar, Juan de D., Province of San Luis.—Snake skin. 638
- 286 Laborda, Franklin, Province of San Luis.—Insects, snake, and lizard. 638
- 287 Day, Edmund, Province of Mendoza.—Viper. 638
- 288 Sanchez, Modesta, Province of Mendoza.—Viper. 638
- 289 Iñiguez, M. A., Province of Buenos Ayres.—Vipers in alcohol. 638

Water Animals, Fish Culture and Apparatus.

- 290 Provincial Commission, Province of Corrientes.—Shells. 645
- 291 Arteaga, Amancio, Province of Santa Fé.—Shells. 645
- 292 Provincial Commission, Province of San Juan.—Baskets. 647
- 293 Machado, Ruben, Province of Catamarca.—Basket of aibé straw. 647
- 294 Provincial Commission, Province of Salta.—Fishing-lines, etc. 647

Animal and Vegetable Products.

- 295 Parana Commission, Province of Entre-Rios.  
     a Sponges. 650  
     b Colt-grease, shad-oil, leather, skins, etc. 652  
     c Ostrich feathers. 653  
     d Sausage, jelly. 654  
     e Domestic beer, lemonade, and wine. 660

## Animal and Vegetable Products.

- 296 Provincial Commission, Province of Salta.  
 a Cheese. 651  
 b Viper vicugna, lion, chinchilla, and other skins; soles. 652  
 c Honey and wax. 654  
 d Dried peaches and nuts. 656  
 e Wheat flour. 657  
 f Mandioca and wheat starch. 658  
 g Querosilla and sugar-cane syrups and sugar. 659  
 h Aguardente brandy. 660
- 297 Dubois, B. B., Province of Entre-Rios.—Cheese. 651
- 298 Vasquez, Lucrecio, Province of Cordoba.—Achala cheese. 651
- 299 Vaillard, Hipolito, Province of Santa Fé.—Cheese. 651
- 299a Elia, Eveguiel, Province of Buenos Ayres.—Cheese. 651
- 300 Provincial Commission, Province of San Luis.  
 a Butter. 651  
 b Lion, hare, fox, buck, otter, and heron skins. 652  
 c Eggs, condor and ostrich feathers. 653  
 d Palpa and honey syrups. 659
- 301 Sola, Juan, Province of Salta.  
 a Cheese. 651  
 b Paisarana, fruit of the Indian fig. 656
- 302 Linares, Calisto, Province of Salta.—Cheese. 651
- 303 Arias, Francisco, Province of Buenos Ayres.—Sheepskin. 652
- 303a Olden, T., Province of Buenos Ayres.—Marrow oil. 652
- 304 Justice of the Peace of Patagones, Province of Buenos Ayres.  
 a Sheepskins. 652  
 b Ostrich feathers. 653  
 c Cherry liqueur and Chacoli wine. 660
- 305 Balcarce, German, Province of Buenos Ayres.—Sheep, goat, wild boar, otter, deer, weasel, wolf, and wild cat skins, etc. 652
- 305a Silges & Ferrando, Province of Buenos Ayres.—Hides and tallow. 652
- 306 Martinez, Luiz, Province of Buenos Ayres.—Hides. 652
- 306a Costa, Angel, Province of Buenos Ayres.—Charcoal. 652
- 307 Fragueiro, G., Province of Buenos Ayres.—Otter and sheepskins. 652
- 307a Ergueta, Manuel, Province of San Luis.—Guaraco's skin. 652
- 307b Ledesma Bros., Province of Cordoba.  
 a Goat skins. 652  
 b Wheat flour. 657
- 308 Provincial Commission, Province of Buenos Ayres.—Sea-lion skin, ox and colt hide. 652
- 309 Valdez, Emiliano, Province of Buenos Ayres.—Lion-skin, colt, and ox-hides. 652
- 310 Fuente, Diego G. de la, Province of Buenos Ayres.—Aguara skin. 652
- 311 Barrotaran, Juan, Province of Buenos Ayres.—Lamb skins. 652
- 312 Dugan, Tomas, Province of Buenos Ayres.—Sheepskins. 652
- 313 Gomez, Lorenzo, Province of Buenos Ayres.—Flamingo skin from La Laguna de los Padres (Balcarce). 652
- 314 Mora, J., Province of Buenos Ayres.—Sheepskin. 652
- 315 Acuña, P. Garcia, Province of Buenos Ayres.—Cow tripe prepared for export. 652
- 316 Battini, Angel Petro, Province of Buenos Ayres.—Leather. 652
- 317 Duportal, Emilio, Province of Buenos Ayres.—Skins. 652
- 318 Arnault, Augusto, Province of Buenos Ayres.—Domestic cat-skins for the cure of rheumatism. 652
- 319 Escalada & Co., Buenos Ayres.—Tanned and colored kid skins for gloves. 652
- 320 Bernard, Joaquin, Province of Buenos Ayres.—Sheep and lamb skins. 652
- 321 Bellocq Bros., Province of Buenos Ayres.—Calf skins. 652
- 322 Iniguez, A. Manuel, Province of Buenos Ayres.—Charcoal of curumand wood. 652
- 323 Jacquemard, Victor, Province of Buenos Ayres.—Animal charcoal. 652
- 324 Mujica, E. S., Province of Buenos Ayres.—Prepared blood for refining sugar and clarifying syrups. 652
- 325 Gauthier, Adolfo, Province of Buenos Ayres.—Tallow. 652
- 326 Santillan Bros. & Co., Province of Santiago del Estero.—Leather for boots and lizard leather for gaiters; skins, etc. 652
- 327 Gelos, Martin, Province of La Rioja.—Wild-boar skins. 652
- 328 Gonzalez, Joaquin, Province of La Rioja.—Lion, vicugna, and ai-ai skins. 652
- 329 Provincial Commission, Province of La Rioja.  
 a Leather, lion, goat, vicugna, and other skins, etc. 652  
 b Dried peaches, raisins, and pressed olives. 656  
 c Starch. 658  
 d Nonogasta syrup. 659  
 e Wine and brandy. 660
- 330 Commission of the Chaco Argentine Territory.  
 a Tiger, wolf, deer, cat, and lion skins, etc. 652  
 b Mandioca starch for making chips bread. 653  
 c Guaviranú liquors, sugar cane and orange juices. 660
- 331 Provincial Commission, Province of Catamarca.  
 a Skins, leather, etc. 652  
 b Lime and orange sweetmeats. 656  
 c Flour. 657
- 332 Andalgalá Sub-commission, Province of Catamarca.—Vicugna, alpaca, gray fox, lamb skins, leather, etc. 652
- 333 Vergara, Alttillo, Province of Catamarca.—Swan skin. 652
- 334 Tinogasta Sub-commission, Province of Catamarca.—Lion, chinchilla, fox, wild-cat, ferret, and wild-boar skins. 652
- 335 Medina, J., Province of Catamarca.—Ampalagua and otter skins. 652
- 336 Santa Maria Sub-commission, Province of Catamarca.—Vicugna, chinchilla, and fox skins. 652

Animal and Vegetable Products.

- 337 Pachin Sub-commission, Province of Catamarca.**—Wildcat, ferret, guana skins, etc. 652
- 338 Belen Sub-commission, Province of Catamarca.**  
*a* Alpaca and vicugna skins. 652  
*b* White wine. 660
- 339 Provincial Commission, Province of Tucuman.**  
*a* Skins and leather. 652  
*b* Wheat starch. 658  
*c* Sugar. 659  
*d* Biscuits. 661
- 340 Provincial Commission, Province of Entre-Rios.**—Swan and deer skins. 652
- 341 Victoria Sub-commission, Province of Entre-Rios.**—Chajá skin. 652
- 342 Benites, A., & Co., Province of Entre-Rios.**  
*a* Tallow. 652  
*b* Wax and honey. 654  
*c* Preserved meats, beef extracts, etc. 656
- 343 Allurralde, Punte y Carril, Province of Entre-Rios.**—Horse hide. 652
- 344 Darcher, Amadeo, Province of Entre-Rios.**—Sea-wolf, fox, wildcat, and otter skins, etc. 652
- 345 Barcos, Pedro B., Province of Entre-Rios.**—Skins. 652
- 346 Rosario Sub-commission, Province of Entre-Rios.**—Buck, otter, ferret, coat, lion, fox, weasel, wildcat skins, etc. 652
- 347 Victoria Sub-commission, Province of Entre-Rios.**—Skins. 652
- 348 Aiurralde, Rodolfo, Province of Entre-Rios.**—Wildcat skin. 652
- 349 Fuento, Gregorio T. de la, & Del Carril, Pedro A., Province of Entre-Rios.**—Sea-wolf, horse, deer skins, etc. 652
- 350 Provincial Commission, Province of Entre-Rios.**—Wildcat, fox, otter skins, etc. 652
- 351 Fontes, Vicente M., & Neygra, Sixto, Province of Entre-Rios.**—Tiger, lion, wolf, fox, ferret, otter, rabbit, wildcat, and weasel skins. 652
- 352 Goyri, Bernardo, Province of Entre-Rios.**—Fox and weasel skins. 652
- 353 Maglioni, Francisco, Province of Entre-Rios.**—Carpincho and deer skins. 652
- 354 Ceballos, Desiderio, Province of Salta.**—Soles, black and morocco leather. 652
- 354a Garcia, Domingo, Province of Rioja.**  
*a* Glue. 652  
*b* Grape syrup. 659
- 355 Saenz, Victoriano,\* Province of Salta.**—Tiger skin. 652
- 356 Zorilla, Benjamin, Province of Salta.**—Llama skin. 652
- 357 Correrias, Segundo, Province of Mendoza.**—Lion skin. 652
- 358 Provincial Commission, Province of Mendoza.**  
*a* Fox skins. 652  
*b* Ostrich feathers. 653  
*c* Dried peaches, sweatmeats, preserved lemons, etc. 656
- 359 Gomez, Cecilio, Province of Mendoza.**—Chanchó wild-boar skin.
- 360 Ribero, Jacinto, Province of San Luis.**—Wildcat skins. 652
- 361 Sierra, Ramon de la, Province of San Luis.**—Aguará nurse and occiput of an ostrich. 652
- 362 Lahiton, Pedro, Province of San Luis.**—Tanned hides. morocco, etc. 652
- 363 Ladies' Commission, Province of San Luis.**  
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- 364 Rodriguez, Severo, Province of San Juan.**  
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*b* Musk and peeled raisins. 656  
*c* Wines. 660
- 365 Vidart, Juan A., Province of San Juan.**—Lina hides. 652
- 366 Ruiz, Clemente, Province of San Juan.**—Merino metis skin. 652
- 367 Moreno, Federico, Province of San Juan.**—Ox hide. 652
- 368 Provincial Commission, Province of San Juar.**  
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*b* Raisins, preserved fruits. 656
- 369 Rodriguez, Victor, Province of San Juan.**  
*a* Horn comb. 652  
*b* Raisins, etc. 656  
*c* Wheat starch. 658  
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*b* Flava wax and honey. 654  
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- 371 Iriarte, Carlos, Province of Cordoba.**—Tanned goat skins. 652
- 372 Ocampo & Acosta, Province of Cordoba.**—Tanned hides. 652
- 373 Provincial Commission, Province of Jujui.**  
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- 374 Dagorret, Modesta, Province of Corrientes.**—Tanned viper skin, sole leather, hides, etc. 652
- 375 Provincial Commission, Province of Corrientes.**  
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*b* Ostrich feathers. 653  
*c* Wax. 654  
*d* Citron, peanut, lime, and other sweetmeats; cocoanuts. 656
- 376 Bella Vista Sub-commission, Province of Corrientes.**—Otter skins. 652
- 377 Echevarria, Cecilio, Province of Santa Fé.**  
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*b* Wax. 654  
*c* Wild fruit, preserved, 656  
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- 379** Martinez, Jonas, Province of Catamarca.—Ostrich feathers. 653
- 380** Suarez, R., Province of Santa Fé.—Ostrich feathers. 653
- 381** Soler, Ventura, Province of Entre-Rios.—Ostrich feathers. 653
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- 383** Invernizzo, J., & Toschini, J., Province of Entre-Rios.—Wax and honey. 654
- 384** Otero, José, Province of Buenos Ayres.—Honey and wax. 654
- 385** Barraquero, Carmen, Province of Mendoza.  
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- 386** Pouyet, Miguel, Province of Mendoza.  
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- 387** Aragon, J. M., Province of Santa Fé.—Honey. 654
- 388** Iramon, Juan, Province of Santa Fé.—Honey and wax. 654
- 389** Jurado, Doraliza, G. de, Province of San Luis.—Honey. 654
- 390** Albarracin, Saturnino, Province of San Juan.—Wax. 654
- 391** Cortinez, Domitilio, Province of San Juan.—Honey. 654
- 392** Piñero, Aurelio, Province of Córdoba.—Wax. 654
- 393** Passel, Teodoro, Province of Córdoba.—Wax. 654
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- 395** Godoy, Nicolas, Province of Mendoza.—Preserved citrons. 656
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- 396** Sanchez, Modesto, Province of Mendoza.—Preserved grapes. 656
- 397** Chaves, Rosaura, Province of Mendoza.—Olives. 656
- 398** Campos, Enrique, Province of Mendoza.  
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- 399** Rufino, Gerónimo C., Province of San Juan.—Musk-grape raisins. 656
- 400** Ramirez & Co., Province of San Juan.—Raisins. 656
- 401** Sarmiento, J. L., Province of San Juan.  
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- 405** Herrera, José, Province of San Juan.—Almonds. 657
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- 414** Bascuñan, Francisco, Province of La Rioja.—Dried figs. 658
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- 421** Treloar, Guillermo A., Province of La Rioja.  
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- 422** Moujon, Mercedes I., Province of Catamarca.—Raisins. 658
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- 453 Lubary, Tomas, Province of Santa Fé.—Flour. 657
- 454 Frank & Lami, Province of Santa Fé.—Flour. 657
- 455 Frischl, Celestino, Province of Santa Fé.—Wheat flour. 657
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- 457 Frias, Salvador, Province of San Juan.—Flour and Chingo flour. 657
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- 473a Garcia, S., Province of Tucuman.—Sugar. 659
- 474 Brisuela, Primitivo, Province of Catamarca.—Grape syrup. 659
- 475 Araob, Adelaida, Province of Catamarca.—Grape syrup. 659
- 476 Castello, Guadalupe, Province of Catamarca.—Grape syrup. 659
- 477 Leri, Petrona de, Province of Catamarca.—Grape syrup. 659
- 478 Aguero, Patricia, Province of Catamarca.—Grape syrup. 659
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- 484 Loy, José, Province of Buenos Ayres.—Hesperidina bitters. 660
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- 504 Lemaistre, Hilario, Province of Mendoza.—Wines, quince, gin, ratafia, and cherry liquors. 660
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- 519 Dávila, Guillermo, Province of La Rioja.—Wines. 660
- 520 Chaves, Crisologo, Province of La Rioja.—Wines and anise brandy. 660
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- 537 Billar, Salvador, Province of Jujuy.—Sugar-cane brandy. 660
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- 539 Clavarino, S., Province of Entre-Rios.—Wine. 660
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- 551a Silva, Florentius, Province of Santa Fé.—Cotton. 660
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## LIBERIA.

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| <p>Morris, Edward S., &amp; Co., St. Paul's River &amp; Philadelphia, Pa.</p> <p>a Iron ore. 100</p> <p>b Fresh and sweet palm-oil hermetically sealed in glass jars, for medical and family use; palm-oil in casks; palm kernel oil; soap made of fresh and sweet palm-oil. 201</p> <p>c Indigo. 202</p> <p>d African curiosities. 312</p> <p>e Coffee-bulling machinery. 585</p> <p>f Cam-wood, hardwoods. 600</p> | <p>g Gums. 603</p> <p>h Coffee, green and roasted; cocoa, ginger, and spices. 623</p> <p>i Palm kernels. 624</p> <p>j Ivory. 651</p> <p>k Palm kernel meal. 657</p> <p>l Arrow-root. 658</p> <p>m Sugar. 659</p> <p>n Cotton. 665</p> <p>o Flax from the Island of St. Helena, raw. 666</p> |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## SPAIN.

*(Nave, South of Main Transept, Columns 13, 14.)*

## Pomology.

## Pomology.

- 1 Jover, Francisco, Alhama, Province of Almeria.—Grapes. 610
- 2 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Grapes. 610
- 3 Romero, Manuel Carbonero, Purchena, Province of Almeria.—Grapes. 610
- 4 Sanchez Bros. & Granados, Ochanes, Province of Almeria.—Grapes. 610
- 5 Ibañez, Luis Gallego, Cazorla, Province of Jaen.—Pears. 610
- 6 Economical Society of Friends of the Country, Valencia.—Paintings of grapes. 610
- 7 Bernabeu y Diego, Juan B., Jabea, Province of Alicante.—Almonds. 611
- 8 Scals, José, Jijona, Province of Alicante.—Almonds. 611
- 9 Piña, Juan Bautista, Monforte, Province of Alicante.—Almonds. 611
- 10 Soriano, Isidro Martinez, Monóvar, Province of Alicante.—Almonds. 611
- 11 Verdu y Perez, Joaquin, Monóvar, Province of Alicante.—Almonds. 611
- 12 Perez, Albert, & Co., Monóvar, Province of Alicante.—Almonds. 611
- 13 Feliú y Rodriguez, José, Benisa, Province of Alicante.—Almonds. 611
- 14 Linares, José Ramon, Albánchez, Province of Almeria.—Almonds. 611
- 15 Trelly y Chacon, Miguel del, Berja, Province of Almeria.—Almonds. 611
- 16 Martin, Francisco Regaña, Cabeza de Vaca, Province of Bajadoz.—Walnuts. 611
- 17 Feliú, Juan, Palma, Balearic Islands.—Almonds. 611
- 18 Wallés, Edmundo, Ibiza, Balearic Islands.—Almonds. 611
- 19 Fuster, Francisco, Palma, Balearic Islands.—Almonds. 611
- 20 Fuster, Miguel, Palma, Balearic Islands.—Almonds. 611
- 21 Mulet, Antonio, Palma, Balearic Islands.—Almonds. 611
- 22 Melian y Artilles, Matias, Las Palmas, Canary Islands.—Almonds. 611
- 23 Provincial Board of Agriculture, Castellon.—Walnuts and acorns. 611
- 24 Berruezo, José Antonio, Villarel, Province of Castellon.—Almonds. 611
- 25 Garcés, Vicente, Castellon.—Almonds. 611
- 26 Soldevilla, Tomás Moragrega, Castellon.—Pomegranates. 611
- 27 Lara, Rafael J. de, Cordoba.—Oranges, lemons, and citrons. 611
- 28 Veja de Armijo, Marquis of, Cordoba.—Oranges and lemons. 611
- 29 Corporation of Palma del Rio, Province of Cordoba.—Walnuts. 611
- 30 Cabezas y Saravia, José, Cordoba.—Hazelnuts. 611
- 31 Cruz Durán, Juan de la, Aracena, Province of Huelva.—Walnuts and chestnuts. 611
- 32 Sala, Emilio de, Huelva.—Almonds. 611
- 33 Montemayor, Maria, Moguer, Province of Huelva.—Almonds. 611
- 34 Cueva, Fernando de la, Huelva.—Almonds. 611
- 35 Carnes, Eulogio Martin, Aracena, Province of Huelva.—Walnuts. 611
- 36 Caras, Serafin, Huesca.—Walnuts. 611
- 37 Moreno, Rufino, Cazorla, Province of Jaen.—Walnuts. 611
- 38 Bulnes, Francisco de Paula, Cazorla, Province of Jaen.—Walnuts. 611
- 39 Corporation of Ponferrada, Province of Leon.—Walnuts and chestnuts. 611
- 40 Corporation of Congosto, Province of Leon.—Chestnuts. 611
- 41 Fernandez, Tomás, Armunia, Province of Leon.—Walnuts. 611
- 42 Prado, Maximo Alonso, Leon.—Walnuts, chestnuts, and hazelnuts. 611
- 43 Agelét, Ramon, Lérida.—Walnuts. 611
- 44 Jover, Luisa de, Province of Lérida.—Almonds. 611
- 45 Ignes, Pedro, Cervera, Province of Lérida.—Hazelnuts. 611
- 46 Corporation of Lorenzano, Province of Lugo.—Walnuts. 611
- 47 Quiroga Vasquez, Quiroga, Province of Lugo.—Chestnuts. 611
- 48 Huelin, Guillermo, & Son, Málaga.—Almonds. 611
- 49 Provincial Deputation, Murcia.—Almonds. 611
- 50 Roca Bros., Murcia.—Pomegranates. 611
- 51 Yañez, Francisco Vila, Viana, Province of Orense.—Chestnuts and walnuts. 611
- 52 Vaamonde, Ramon Maria, Puirgin, Province of Orense.—Chestnuts and walnuts. 611
- 53 Rey, Manuel Pereiro, Orense.—Hazelnuts. 611
- 54 Candedo, Manuel, Coles, Province of Orense.—Hazelnuts. 611

## Pomology.

- 55 Diaz, Francisco, Trandeiras, Province of Orense.—Walnuts. 611
- 56 Rodriguez, Manuel Iglesias, Celanova, Province of Orense.—Fruits. 611
- 57 Provincial Board of Agriculture, Industry and Commerce, Oviedo.—Chestnuts, walnuts, and hazelnuts. 611
- 58 Rios, Eugenio Montero, Pontevedra.—Oranges, lemons, and citrons. 611
- 59 Brabo, Bernardo, Fregeneda, Province of Salamanca.—Almonds. 611
- 60 Paulino, Felipe Perez, Fregeneda, Province of Salamanca.—Almonds. 611
- 61 Hortal, Ignacio, Fregeneda, Province of Salamanca.—Almonds. 611
- 62 Garcia, José Sanchez, Fregeneda, Province of Salamanca.—Almonds. 611
- 63 Corbalan, Juan, Sancelle, Province of Salamanca.—Almonds. 611
- 64 Viesca, Marquis of, Fregeneda, Province of Salamanca.—Almonds. 611
- 65 Miguel, Ramon, Hinojosa, Province of Salamanca.—Almonds. 611
- 66 Rivero, Tomás, Hinojosa, Province of Salamanca.—Almonds. 611
- 67 Garrido, Juan, Valero, Province of Salamanca.—Walnuts. 611
- 68 Martin, Lorenzo Calvo, Mogarriz, Province of Salamanca.—Walnuts. 611
- 69 Bellido, Narciso, Zorita, Province of Salamanca.—Walnuts. 611
- 70 Sanchez, Antonio Capita, Mairena, Province of Sevilla.—Oranges. 611
- 71 Viñas, Antonio, Reus, Province of Tarragona.—Almonds. 611
- 72 Magriña, Antonio, Gandesa, Province of Tarragona.—Almonds. 611
- 73 Peira y Mach, Agustín, Scala Dei, Province of Tarragona.—Almonds, walnuts, and hazelnuts. 611
- 74 Franch & Segriá, Uldemolins, Province of Tarragona.—Hazelnuts. 611
- 75 Escoda, Antonio, Vilaseca, Province of Tarragona.—Hazelnuts. 611
- 76 Bufill, B., Reus, Province of Tarragona.—Almonds. 611
- 77 Gasull, Bartolomé, Province of Tarragona.—Almonds and hazelnuts. 611
- 78 Consul & Virgili, Tarragona.—Hazelnuts. 611
- 79 Domingo, Dimas, Reus, Province of Tarragona.—Almonds and raisins. 611
- 80 Prieto, Eusebio, Reus, Province of Tarragona.—Walnuts. 611
- 81 Gil, Francisco, Reus, Province of Tarragona.—Almonds and hazelnuts. 611
- 82 Pellicer, Francisco, Porrera, Province of Tarragona.—Almonds and hazelnuts. 611
- 83 Sostres, Francisco Reus, Province of Tarragona.—Hazelnuts. 611
- 84 Vigueres y Monlló, Francisco, Uldemolins, Province of Tarragona.—Almonds. 611
- 85 Montaña, Francisco Roca, Cambrils, Province of Tarragona.—Almonds. 611
- 86 Margales, Francisco Escoda, Vandellós, Province of Tarragona.—Almonds. 611
- 87 Puigcercós y Anglés, Francisco, Uldemolins, Province of Tarragona.—Almonds. 611
- 88 Lluirba, Francisco, Uldemolins, Province of Tarragona.—Almonds. 611
- 89 Fumana Bros., Reus, Province of Tarragona.—Almonds and hazelnuts. 611
- 90 Prius, Francisco, Reus, Province of Tarragona.—Hazelnuts. 611
- 91 Comas, Francisco, Reus, Province of Tarragona.—Hazelnuts. 611
- 92 Pfeiffer, Herman, Reus, Province of Tarragona.—Hazelnuts. 611
- 93 Coll, José, Valls, Province of Tarragona.—Walnuts. 611
- 94 Miret y Segriá, José, Uldemolins, Province of Tarragona.—Walnuts. 611
- 95 Domenech y Monte, José, Vilaseca, Province of Tarragona.—Almonds. 611
- 96 Grau y Vilanova, José, Maria, Maspujols, Province of Tarragona.—Hazelnuts. 611
- 97 Anlestia, José, Ciurana, Dosaiguas, Province of Tarragona.—Hazelnuts. 611
- 98 Illas, José Montagut, Reus, Province of Tarragona.—Hazelnuts. 611
- 99 Forasté y Ferré, Juan, Vilaseca, Province of Tarragona.—Almonds. 611
- 100 Magriña, Luis, Falset, Province of Tarragona.—Hazelnuts. 611
- 101 Magriña, Manuel Serrano, Tibias, Province of Tarragona.—Hazelnuts. 611
- 102 Artells, Miguel, Reus, Province of Tarragona.—Almonds and hazelnuts. 611
- 103 Bassedas y Andreu, Miguel, Reus, Province of Tarragona.—Hazelnuts. 611
- 104 Magriña, Mariano, La Selva, Province of Tarragona.—Hazelnuts. 611
- 105 Salvadó, Mateo, Tarragona.—Hazelnuts. 611
- 106 Abelló y Boada, Pablo, Barbara, Province of Tarragona.—Almonds, hazelnuts, walnuts, and pine-nuts. 611
- 107 Fausá, Pablo, La Canonja, Province of Tarragona.—Almonds and hazelnuts. 611
- 108 Sirvent y Oliver, Pedro, Reus, Province of Tarragona.—Almonds and hazelnuts. 611
- 109 Montoliu, Plácido Maria de, Tarragona.—Hazelnuts. 611
- 110 Anguera y Anglés, Falset, Province of Tarragona.—Hazelnuts and almonds. 611
- 111 Escolá y Franch, Ramon, Reus, Province of Tarragona.—Hazelnuts and almonds. 611
- 112 Monlleó, Ramon, Uldemolins, Province of Tarragona.—Almonds. 611
- 113 Siscar, Ramon, La Canonja, Province of Tarragona.—Hazelnuts. 611
- 114 Roy, Ponseti & Co., Tarragona.—Hazelnuts and almonds. 611
- 115 Soberano & Co., Reus, Province of Tarragona.—Hazelnuts and almonds. 611
- 116 Salvadó, Salvador, Riudoms, Province of Tarragona.—Hazelnuts. 611
- 117 Freixá, Sebastian, Reus, Province of Tarragona.—Hazelnuts. 611

## Pomology, Agricultural Products.

- 118 Robres, Sebastian Garcia de, Scala Dei, Province of Tarragona.—Almonds. 611
- 119 Barcuys, Tomás, Maspujols, Province of Tarragona.—Hazelnuts. 611
- 120 Esteve, A., Widow & Son of, Reus, Province of Tarragona.—Hazelnuts, almonds, and walnuts. 611
- 121 Society of Agriculture, Valencia.—Walnuts and acorns. 611
- 122 Lassala y Palomares, Vicente, Masia de la mar.—Province of Valencia.—Almonds. 611
- 123 Fernandez, Tomás Vicente, Fuentesauco, Province of Zamora.—Walnuts. 611
- 124 Poey, Juan, Habana, Cuba.—Oranges. 611
- Agricultural Products.**
- 125 School of Agriculture, Vitoria, Province of Alava.—Cereals. 620
- 126 Maroni, José, Hellin, Province of Albacete.—Wheat. 620
- 127 Guerrero, José, Hellin, Province of Albacete.—Summer wheat. 620
- 128 Espinosa, Juan, Hellin, Province of Albacete.—Wheat. 620
- 129 Dios Aguado y Alarcon, Juan de, Corral Rubio, Province of Albacete.—Cereals. 620
- 130 Guevara, Vicente Ladron de, Tobará, Province of Albacete.—Wheat. 620
- 131 Ramos, Juan Bautista, Alicante.—Summer wheat. 620
- 132 Sellés, Joaquín, Elche, Province of Alicante.—Maize. 620
- 133 Gimenez, Fco Sanchez, Alicante.—Wheat. 620
- 134 Perez, Joaquin Verdú, Monóvar, Province of Alicante.—Wheat, barley, and maize. 620
- 135 Sanchez, José, Alicante.—Barley. 620
- 136 Gil, Joaquín, Alicante.—Wheat. 620
- 137 Scals, José, Gijón, Province of Alicante.—Wheat. 620
- 138 Linares, José Ramon, Albánchez, Province of Almería.—Maize and wheat. 620
- 139 Daza, Francisco, Purchena, Province of Almería.—Cereals. 620
- 140 Perez, Mariano Valverde, Fontiveros, Province of Avila.—Summer wheat. 620
- 141 Rodriguez, Francisco Mariano, Fontiveros, Province of Avila.—Barley. 620
- 142 Sainz, Matias, Donvidas, Province of Avila.—Summer wheat. 620
- 143 Coca, Juan de, Langa, Province of Avila.—Summer wheat and barley. 620
- 144 Sacristan, Tomás, Sinlabajos, Province of Avila.—Summer wheat. 620
- 145 Diaz, Gaspar, Cabezas del Pozo, Province of Avila.—Summer wheat. 620
- 146 Guerra, Blas, Cabezas del Pozo, Province of Avila.—Summer wheat. 620
- 147 Paradinas, José, Cabezas del Pozo, Province of Avila.—Summer wheat. 620
- 148 Rodriguez, Bernardo Nava, Langa, Province of Avila.—Summer wheat. 620
- 149 Paradinas, Gregorio, Bernuy Zarpardiel, Province of Avila.—Winter barley. 620
- 150 Astorga, Pedro Gonzales, Gutierrez Muñoz, Province of Avila.—Winter barley. 620
- 151 Astorga, Agapito Gonzales, Gutierrez Muñoz, Province of Avila.—Summer wheat. 620
- 152 Rodriguez, Roberto, Villamayor, Province of Avila.—Summer wheat. 620
- 153 Garcia, Isidro Sanchez, Horcajo de las Torres, Province of Avila.—Summer wheat. 620
- 154 Calafate, Antolin Fernandez, Horcajo de las Torres, Province of Avila.—Summer wheat. 620
- 155 Lambas, Manuel, Palacios de Goda, Province of Avila.—Summer wheat. 620
- 156 Saiz, Cleto Lopez, Palacios de Goda, Province of Avila.—Summer wheat. 620
- 157 Castro, Eusebio Ramiro, Arévalo, Province of Avila.—Summer wheat. 620
- 158 Navajas, Felipe Saenz, Arévalo, Province of Avila.—Summer wheat. 620
- 159 Moreno, Cayetano, Villalba de los Barros, Province of Badajoz.—Wheat and barley. 620
- 160 Rebollo, Demetrio, Cabeza de Vaca, Province of Badajoz.—White wheat. 620
- 161 Molano, Pedro, Badajoz.—Wheat and barley. 620
- 162 Gregori, Tomás, Badajoz.—Wheat and barley. 620
- 163 Venegas, Juan, Valle de Matamorras, Province of Badajoz.—Wheat. 620
- 164 Lopo, Casimiro, Badajoz.—Wheat and barley. 620
- 165 Lopo, Felix, Badajoz.—Wheat and barley. 620
- 166 Amador, Alfonse, Guareña, Province of Badajoz.—Red wheat. 620
- 167 Sanchez, Maria Romero, Cabeza de Vaca, Province of Badajoz.—Lammas wheat and barley. 620
- 168 Ortiz, Eugenio, Villagarcia, Province of Badajoz.—Wheat, barley, and oats. 620
- 169 Moreno, José Salvador, Cabeza de Vaca, Province of Badajoz.—Oats. 620
- 170 Borralló, Maria, Cabeza de Vaca, Province of Badajoz.—Rye. 620
- 171 Soler y Sigüer, José, Mahon, Balearic Islands.—Summer wheat. 620
- 172 Detlós, Gertrudis de, Ripoll, Province of Barcelona.—Maize. 620
- 173 Vila, Juan, Martorell, Province of Barcelona.—Wheat. 620
- 174 Bosh y Gausa, Luis, Barcelona.—Wheat. 620
- 175 Subirach, Mariano, Vich, Province of Barcelona.—Barley. 620
- 176 Gariga, Francisco Domingo, San Quirze de Basora, Province of Barcelona.—Cereals. 620

## Agricultural Products.

- 177 Dodero y Ponte, José, Pomar de Badalona, Province of Barcelona.—Carrobs. 621
- 178 Gordojueta, Remigio, Miranda de Ebro, Province of Burghs.—Red wheat. 620
- 179 Abad, Gregorio, Aranda de Duero, Province of Burghs.—White wheat. 620
- 180 Villanueva, Felipe de, Carcedo de Burghs, Province of Burghs.—Wheat. 620
- 181 Moral, Santiago, & Bros., Burghs.—Lammas wheat. 620
- 182 Mate, Antonio, Burghs.—Wheat. 620
- 183 Gonzalez, Dionisio, La Molina, Province of Burghs.—Wheat. 620
- 184 Horcajo, Marcos, Lerma, Province of Burghs.—Wheat and rye. 620
- 185 Quintana y Ruiz, Fidel, Burghs.—Cereals. 620
- 186 Fernandez, Primitivo, Burghs.—Winter barley. 620
- 187 Alonso, Julian, Lerma, Province of Burghs.—Common barley. 620
- 188 Provincial Deputation, Burghs.—Oats. 620
- 189 Corporation of Miranda de Ebro, Province of Burghs.—Maize. 620
- 190 Beson, Eduardo A. de, Burghs.—White maize. 620
- 191 Provincial Commission of Miranda de Ebro, Burghs.—Red and summer maize. 620
- 192 Roman, Simon, Cáceres.—Cereals. 620
- 193 Lubian, Saturnino, Plasenzuela, Province of Cáceres.—Wheat and barley. 620
- 194 Perez y Romero, Francisco Garcia, Jerez de la Frontera, Province of Cadiz.—Canary seed, St. Peter's corn, and maize. 620
- 195 Pley y Bondigue, Francisco, Puerto-Real, Province of Cadiz.—Maize. 620
- 196 Corporation of Chiclana, Province of Cadiz.—Wheat, barley, and maize. 620
- 197 Corporation of Tarifa, Province of Cadiz.—Wheat, barley, and canary seed. 620
- 198 Vega Grande, Count of, Las Palmas, Canary Islands.—Maize. 620
- 199 Society of Friends of the Country, Las Palmas, Canary Islands.—Maize. 620
- 200 Ponce de Leon, Juan, Las Palmas, Canary Islands.—Cereals. 620
- 201 Provincial Commission of Tenerife, Canary Islands.—Cereals. 620
- 202 Escribano, José, Vinaroz, Province of Castellon.—Carrobs. 621
- 203 Provincial Board of Agriculture, Castellon.—Cereals. 620
- 204 Rubisco, Cayetano Clemente, Ciudad-Real.—Wheat and barley. 620
- 205 Cabezuelas, Count of, Campo de Criptana, Province of Ciudad-Real.—Cereals. 620
- 206 Loro, Francisco, Daimiel, Province of Ciudad-Real.—Maize. 620
- 207 Sanchez, Sotero, Daimiel, Province of Ciudad-Real.—Panic-grass. 620
- 208 Criado, José Gomez, Villa del Rio, Province of Córdoba.—Wheat. 620
- 209 Corporation of Cabra, Province of Córdoba.—Wheat. 620
- 210 Valverde, Francisco, Aguilera, Priego, Province of Córdoba.—Wheat. 620
- 211 Priego, Rafael Molina, Province of Córdoba.—Wheat. 620
- 212 Sarmiento, Antonio Alba, Priego, Province of Córdoba.—Wheat. 620
- 213 Serrano, Tomás, Priego, Province of Córdoba.—Wheat. 620
- 214 Vallejo, Rafael, Córdoba.—Wheat. 620
- 215 Corporation of Bujalance, Province of Córdoba.—Black wheat. 620
- 216 Escribano, Luis, Pozoblanco, Province of Córdoba.—Wheat. 620
- 217 Prieto, Sebastian, Encinas-Reales, Province of Córdoba.—Wheat. 620
- 218 Ariza y Ariza, José, Baena, Province of Córdoba.—Wheat. 620
- 219 Gimenez, José Maria, Baena, Province of Córdoba.—Wheat. 620
- 220 Navarro, Rafael, Córdoba.—Barley and wheat. 620
- 221 Hoces, Ana de, Córdoba.—Black wheat. 620
- 222 Galan, Alfonso Blanco, Dos Torres, Province of Córdoba.—Wheat. 620
- 223 Matilla, Carlos, Córdoba.—Wheat. 620
- 224 Conde, Juan, Córdoba.—Canary-seed, wheat, and barley. 620
- 225 Corporation of Lucena, Province of Córdoba.—Wheat. 620
- 226 Cabanar y Blanco, Rafael, Córdoba.—Barley. 620
- 227 Estrada, Ramon, Córdoba.—Wheat and barley. 620
- 228 Puentes y Roldan, Felipe, Córdoba.—Barley. 620
- 229 Santaló, Estéban, Córdoba.—Wheat. 620
- 230 Fernandez, Antonio, Córdoba.—Wheat. 620
- 231 Barbudo, Francisco de P., Córdoba.—Barley and wheat. 620
- 232 Barrionueva, Fernando, Córdoba.—Black wheat and barley. 620
- 233 Sisternes, Manuel, Córdoba.—Black wheat. 620
- 234 Carmona, Salvador, Montemayor, Province of Córdoba.—Wheat. 620
- 235 Fernandez, Gumersindo, Hinojosa, Province of Córdoba.—Red wheat. 620
- 236 Sanchez, Manuel, Belmez, Province of Córdoba.—Wheat. 620
- 237 Aurea y Rivera, Antonio, Belmez, Province of Córdoba.—Wheat. 620
- 238 Pacheco, Rafael Granados, Benameji, Province of Córdoba.—Barley. 620
- 239 Velasco, Bernardo Dominguez, Benameji, Province of Córdoba.—Wheat. 620
- 240 Corporation of Hornachuelos, Province of Córdoba.—Wheat. 620
- 241 Malgarejo, Maria Josefa, San Clemente, Province of Córdoba.—Wheat. 620



## Agricultural Products.

- 242 Plaza y Garrejo, Felipe, Villarejo de Fuentes, Province of Cuenca.—Wheat.** 620
- 243 Redondo, Peregrin, Valverde de Júcar, Province of Cuenca.—Wheat.** 620
- 244 Bautista, Mariano, Olmedilla de Alarcón, Province of Cuenca.—Wheat.** 620
- 245 Torre, Pablo de la, Tarancon, Province of Cuenca.—Summer wheat.** 620
- 246 Salazar y Cuebas, Pio, Santa María de los Llanos, Province of Cuenca.—Summer wheat.** 620
- 247 Melgarejo, Manuel, San Clemente, Province of Cuenca.—Summer wheat.** 620
- 248 Hellin, Desiderio, San Clemente, Province of Cuenca.—Summer wheat.** 620
- 249 Bruse, José María, Cuenca.—Common barley.** 620
- 250 Masó y Soler, Félix, Blancas, Province of Gerona.—Wheat and maize.** 620
- 251 Martí, Diego García, Guadalajara.—Wheat.** 620
- 252 Muñoz, Marcelino, Sigüenza, Province of Guadalajara.—Wheat and barley.** 620
- 253 Medrano, Félix, Guadalajara.—Barley.** 620
- 254 Reyes y Rich, Juan A., Guadalajara.—Barley.** 620
- 255 Lopez, José María, Huelva.—Wheat and white maize.** 620
- 256 Riera y Fernandez, José, Huelva.—Wheat.** 620
- 257 Soldán, Antonio, La Palma, Province of Huelva.—Wheat and barley.** 620
- 258 Carrasco, José María, Bonares, Province of Huelva.—Wheat.** 620
- 259 Cerero y Barreda, Emilio, Trigueros, Province of Huelva.—Wheat.** 620
- 260 Orta, Pedro de, Cartaya, Province of Huelva.—White maize.** 620
- 261 Vargas, José Rafael, Escacena del Campo, Province of Huelva.—Wheat.** 620
- 262 Lanzas, Juan Antonio, Alcubierre, Province of Huesca.—Red wheat.** 620
- 263 Gabarres, Mariano, Alcubierre, Province of Huesca.—Red wheat.** 620
- 264 Gabarres, José, Alcubierre, Province of Huesca.—Red wheat.** 620
- 265 Lapidra, Joaquin, Sarriena, Province of Huesca.—Red wheat.** 620
- 266 Lasiera, Francisco, Pallazuela, Province of Huesca.—Red wheat.** 620
- 267 Lasiera, Joaquin, Pallazuela, Province of Huesca.—Summer wheat.** 620
- 268 Otal, José María, Castillo de Carbino, Province of Huesca.—Wheat, maize, and barley.** 620
- 269 Nasarre, Voto, Lupiñén, Province of Huesca.—Red wheat.** 620
- 270 Altemir, José, Sarriena, Province of Huesca.—Red wheat.** 620
- 271 Oliver, D. L., Huesca.—Hard wheat, black oats, and barley.** 620
- 272 Villalta y Uribe, Antonio Fernandez, Torre, Don Gimeno, Province of Jaén.—Wheat.** 620
- 273 Herreros, Juan Ignacio, Isnatoraf, Province of Jaén.—Wheat.** 620
- 274 Abolafia, Antonio Diaz, Jaén.—Yellow maize.** 620
- 275 Anevas, Justo Maria, Jaén.—White maize.** 620
- 276 Jontoja, Manuel, Jaén.—Wheat.** 620
- 277 Prado, Maximo Alonso, Leon.—Cereals.** 620
- 278 Nuñez, Lino, Sahagun, Province of Leon.—Lammas wheat.** 620
- 279 Santos, Pablo, Fuentes de los Oteros, Province of Leon.—Summer and lammas wheat.** 620
- 280 Corporation of Pajares de Oteros, Province of Leon.—Barley and rye.** 620
- 281 Corporation of Valdefresno, Province of Leon.—Wheat, barley, and rye.** 620
- 282 Corporation of Valverde del Camino, Province of Leon.—Wheat, barley, and rye.** 620
- 283 Corporation of Vega de Infanzones, Province of Leon.—Barley and rye.** 620
- 284 Corporation of Arganza, Province of Leon.—Wheat, barley, and rye.** 620
- 285 Corporation of Mansilla Mayor, Province of Len.—Wheat, barley, and rye.** 620
- 286 Corporation of Mansilla de las Mulas, Province of Leon.—Wheat, barley, and rye.** 620
- 287 Corporation of Congosto, Province of Leon.—Wheat, barley, and rye.** 620
- 288 Corporation of Ponferrada, Province of Leon.—Wheat, barley, and rye.** 620
- 289 Fernandez, Tomás, Armunia, Province of Leon.—Wheat, barley, and rye.** 620
- 290 Corporation of Páramo del Sil, Province of Leon.—Maize.** 620
- 291 Corporation of Encinedo, Province of Leon.—Rye.** 620
- 292 Corporation of Magaz, Province of Leon.—Rye.** 620
- 293 Corporation of Omaña, Province of Leon.—Wheat.** 620
- 294 Alós, Francisco, Balaguer, Province of Lérida.—Wheat.** 620
- 295 Oliveres, Mauricio, Torreserona, Province of Lérida.—Wheat.** 620
- 296 Lafont, Andrés, Borjar, Province of Lérida.—Wheat.** 620
- 297 Lopez, Manuel, Puigvert, Province of Lérida.—Barley.** 620
- 298 Ball, José, Agramunt, Province of Lérida.—Barley and wheat.** 620
- 299 Ron, Ramon, Vinaixa, Province of Lérida.—Wheat.** 620
- 300 Viela, Ramon Terez de, Tórrega, Province of Lérida.—Barley.** 620
- 301 Andreu, Roque, Tórrega, Province of Lérida.—Wheat.** 620
- 302 Jover, Luisa de, Tórrega, Province of Lérida.—Wheat.** 620
- 303 Corporation of Agramunt, Province of Lérida.—Wheat and barley.** 620
- 304 Corporation of Puigvert, Province of Lérida.—Barley.** 620
- 305 Corporation of Vinaixa, Province of Lérida.—Wheat.** 620

## Agricultural Products.

- 306 Corporation of Las Borjas, Province of Lérida.—Wheat. 620
- 307 Pinós, José María, Malpartida, Province of Lérida.—Common wheat. 620
- 308 Paradela, Domingo, Castroverde, Province of Lugo.—Barley and rye. 620
- 309 Lajo, Domingo Antonio, Corgo, Province of Lugo.—Rye. 620
- 310 Vasquez, José Leoncio, Mondoñedo, Province of Lugo.—Husked maize. 620
- 311 Freire, Manuel Soto, Pantón, Province of Lugo.—Maize. 620
- 312 Ferreiro y Hermida, Antonio, Alfó, Province of Lugo.—Yellow maize. 620
- 313 Armesto, Ramon, Puebla del Brolon, Province of Lugo.—Wheat. 620
- 314 Corporation of Lorenzana, Province of Lugo.—Yellow maize. 620
- 315 Legaspi, Juan, Villalba, Province of Lugo.—Rye. 620
- 316 Pallares, Count of, Villalba, Province of Lugo.—Wheat. 620
- 317 Montenegro, Manuel Pardo, Fox, Province of Lugo.—Yellow maize. 620
- 318 Pillado, Eliseo Martínez, Fox, Province of Lugo.—Wheat and early maize. 620
- 319 Martínez, Ramon Antonio, Sarria, Province of Lugo.—Yellow maize, wheat, and barley. 620
- 320 Mendez, José Perez, Sober, Province of Lugo.—Barley and wheat. 620
- 321 Calatrava, Francisco Garcia, Alcobendas, Province of Madrid.—Wheat, barley, and oats. 620
- 322 Gago, Juan Borrego, Ronda, Province of Malaga.—Wheat. 620
- 323 Romero, Joaquin Perez, Santa Maria de la Rabida, Province of Orense.—Cereals. 620
- 324 Rodriguez, Manuel Iglesias, Celanova, Province of Orense.—Cereals. 620
- 325 Rey, Manuel Pereiro, Province of Orense.—Cereals. 620
- 326 Diaz, Francisco, Trandeiras, Province of Orense.—Rye. 620
- 327 Vila, Francisco, Viana del Bollo, Province of Orense.—Rye. 620
- 328 Vaamonde, Ramon María, Pungin, Province of Orense.—Maize. 620
- 329 Romero y Romero, José, Ginzo de Limia, Province of Orense.—Rye. 620
- 330 Anta, Ignacio, Orense.—Rye and maize. 620
- 331 Iglesias, Ramon, Beiro, Province of Orense.—Rye and maize. 620
- 332 Board of Agriculture, Industry, and Commerce, Oviedo.—Wheat and maize. 620
- 333 Durango, Manuel Martinez, Palencia.—Barley. 620
- 334 Gregorio, Sotero, Palencia.—Wheat and barley. 620
- 335 Gutierrez, Juan Francisco, Palencia.—Wheat and barley. 620
- 336 Dominguez, Miguel, Palencia.—Barley. 620
- 337 Sevilla, José, Fuentes de Nava, Province of Palencia.—Wheat. 620
- 338 Rodriguez, Tomás, Fuentes de Nava, Province of Palencia.—Wheat. 620
- 339 Pombo, Pedro, Fuentes de Nava, Province of Palencia.—Wheat. 620
- 340 Solorzano, Juan, Baltanas, Province of Palencia.—Oats. 620
- 341 Gutierrez, Simon, Monzon, Province of Palencia.—Rye. 620
- 342 Tabarés, Federico Rodriguez, Torremormojon, Province of Palencia.—Wheat. 620
- 343 Escudero, Felipe, Cisneros, Province of Palencia.—Wheat. 620
- 344 Herrero, Agustín, Mazariegos, Province of Palencia.—Wheat. 620
- 345 Herrero, Pedro Romero, Amasol, Province of Palencia.—Wheat. 620
- 346 Prieto, Basilio, Herrero, Herrera de Valdecañas, Province of Palencia.—Wheat. 620
- 347 Monedero, Joaquin, Cevico de la Torre, Province of Palencia.—Wheat. 620
- 348 Palacin, Deogracias, Palenzuela, Province of Palencia.—Wheat. 620
- 349 Pifeiro, Ramon Somora, Mera, Province of Pontevedra.—Cereals. 620
- 350 Onís, Federico, Cantalapiedra, Province of Salamanca.—Cereals. 620
- 351 Peña, Josefa Gonzalez de la, Mancera de Abajo, Province of Salamanca.—Wheat. 620
- 352 Cabrera Victoriano, Cantalapiedra, Province of Salamanca.—Wheat. 620
- 353 Bellido, Narciso, Zorita de la Frontera, Province of Salamanca.—Wheat. 620
- 354 Blasquez, Agustín, Tordillos, Province of Salamanca.—Wheat. 620
- 355 Rodriguez, Zacarias, Cantalapiedra, Province of Salamanca.—Wheat, barley, and rye. 620
- 356 Merino, Miguel, Cordobilla, Province of Salamanca.—Wheat. 620
- 357 Pineda, Eduardo de, Los Huelmos, Province of Salamanca.—Wheat and barley. 620
- 358 Fuentes, José, La Pinilla, Province of Salamanca.—Wheat and rye. 620
- 359 Rodriguez, Julian, Doñinos, Province of Salamanca.—Wheat and barley. 620
- 360 Sanchez, Francisco, Las Torres, Province of Salamanca.—Wheat. 620
- 361 Martin, Saturnino, Cilleros el Hondo, Province of Salamanca.—Wheat. 620
- 362 Hernando y Nieto, Francisco, Boveda del Rio al Mar, Province of Salamanca.—Wheat. 620
- 363 Paradinas, Acacio, Cantalapiedra, Province of Salamanca.—Wheat and barley. 620
- 364 Mulas, Sinforiano, Villar de Gallemazo, Province of Salamanca.—Wheat. 620
- 365 Martin, Santiago, Tarazona, Province of Salamanca.—Wheat. 620
- 366 Perez, Domingo, Aldeatejada, Province of Salamanca.—Wheat. 620
- 367 Andrés, Leon, Tarazona, Province of Salamanca.—Wheat. 620

## Agricultural Products.

- 368 Mayoral, Andrés, Los Huelmos, Province of Salamanca.—Wheat. 620
- 369 García, Rafael, Cantalapiedra, Province of Salamanca.—Summer wheat and barley. 620
- 370 Toribio, Antonio Martín, Villares de la Reina, Province of Salamanca.—Summer wheat and barley. 620
- 371 Corporation of Vetigudino, Province of Salamanca.—Wheat. 620
- 372 Mozas, Antonio Alfonso de las, Province of Salamanca.—Summer wheat. 620
- 373 Poveda, Paulino, Pedroso, Province of Salamanca.—Lammas wheat, barley, and rye. 620
- 374 Delgado, Miguel González, Rágama, Province of Salamanca.—Summer wheat. 620
- 375 Terreros, Santiago Juanes, Villares de la Reina, Province of Salamanca.—Summer wheat. 620
- 376 Díaz, Gaspar, Villaflores, Province of Salamanca.—Summer wheat. 620
- 377 Llaño, Martín Gómez de, Peñaranda de Bracamonte, Province of Salamanca.—Summer wheat. 620
- 378 Hernández, Antonio, Malpartida, Province of Salamanca.—Summer wheat. 620
- 379 Escribano, Francisco, Dehesa de Terrados, Province of Salamanca.—Summer wheat. 620
- 380 Marcos, Estéban, Parada de Rubiales, Province of Salamanca.—Summer wheat. 620
- 381 Carbayo, Luis, San Cristóbal de la Cuesta, Province of Salamanca.—Summer wheat. 620
- 382 Samaniego, Manuel García, Salamanca.—Summer wheat. 620
- 383 Sánchez, Felipe Pérez, Fregeneda, Province of Salamanca.—Summer wheat. 620
- 384 Paulino, Diego Pérez, Fregeneda, Province of Salamanca.—Wheat. 620
- 385 García, Ángel, Cantalapiedra, Province of Salamanca.—Barley. 620
- 386 Torre Ajero, Mariano & Cipriano de la, Arolo de Cuellar, Province of Segovia.—Wheat, rye, and barley. 620
- 387 González, Ezequiel, Segovia.—White wheat. 620
- 388 López, Mariano, Balisa, Province of Segovia.—Wheat and barley. 620
- 389 Satnyen, Pedro, Riza, Province of Segovia.—Cereals. 620
- 390 Hernández, Juan, Villacastín, Province of Segovia.—Lammas wheat. 620
- 391 Gordo, Feliciano, Villacastín, Province of Segovia.—Summer wheat. 620
- 392 Palatin y Moreno, Fernando, Sevilla.—Maize. 620
- 393 Andrade, Manuel Zayas, Arahal, Province of Sevilla.—Wheat. 620
- 394 González, Rafael, Sevilla.—Maize. 620
- 395 Miura y Fernández, Bentonto, Sevilla.—Seed wheat. 620
- 396 Pantion, Manuel Fernández, Sevilla.—Maize. 620
- 397 Ojeda y Gómez, Juan, Sevilla.—Maize. 620
- 398 Masa, Juan Gómez de la, Olivares, Province of Sevilla.—Barley. 620
- 399 Silva y Pérez, José, Olivares, Province of Sevilla.—Maize. 620
- 400 Pérez, José, Olivares, Province of Sevilla.—Barley. 620
- 401 Ojeda, Juan María Rodríguez, Olivares, Province of Sevilla.—Wheat. 620
- 402 Cotañ y Muñoz, Manuel, Olivares, Province of Sevilla.—Wheat. 620
- 403 Cotañ, Antonio García, Olivares, Province of Sevilla.—Wheat. 620
- 404 Estrada y Lasarte, Manuel, Osuna, Province of Sevilla.—Barley. 620
- 405 Ramírez, Manuel Tamayo, Osuna, Province of Sevilla.—Barley. 620
- 406 Castro y Torres, Francisco, Osuna, Province of Sevilla.—Wheat. 620
- 407 Morillas, Ramón Farfán, Cantillana, Province of Sevilla.—Wheat. 620
- 408 Rivas y Morillas, Antonio, Cantillana, Province of Sevilla.—Barley. 620
- 409 Teruel, Pedro, & Bro., Cantillana, Province of Sevilla.—Wheat. 620
- 410 Sánchez, Benito Navarro, Mairena del Alcor, Province of Sevilla.—Wheat. 620
- 411 Lozano, Manuel Seda, Mairena del Alcor, Province of Sevilla.—Barley. 620
- 412 Méndez, Antonio, Mairena del Alcor, Province of Sevilla.—Seed wheat. 620
- 413 Puente, Salvador & Alejandro Lináres, Burguillos, Province of Sevilla.—Wheat. 620
- 414 Martínez Sains Bros., Sevilla.—Wheat. 620
- 415 Caso-Galindo, Count of, Carmona, Province of Sevilla.—Wheat. 620
- 416 Dos Fuentes, Viscount of, Carmona, Province of Sevilla.—Wheat. 620
- 417 Vallejo, José, Mairena del Alcor, Province of Sevilla.—Canary seed. 620
- 418 Rosa y Silva, José de la, Villamanrique, Province of Sevilla.—Maize. 620
- 419 Pulg, Juan, La Rinconada, Province of Sevilla.—Seed wheat. 620
- 420 Alba, Diego Sánchez, Lebrija, Province of Sevilla.—Summer wheat. 620
- 421 Vasquez y Rodríguez, Ignacio, Aznalcázar, Province of Sevilla.—Barley and wheat. 620
- 422 Méndez, Felipe, Mairena del Alcor, Province of Sevilla.—Wheat and barley. 620
- 423 Auñón y León, Antonio, Morón, Province of Sevilla.—Wheat and barley. 620
- 424 Villalón y Torres, Andrés, Morón, Province of Sevilla.—Barley and canary seed. 620
- 425 Amores, Manuel, Salteras y Olivares, Province of Sevilla.—Barley and St. Peter's corn. 620
- 426 Serrano, Miguel Pérez, Olivares, Province of Sevilla.—Wheat. 620
- 427 León, Manuel Giménez, Carmona, Province of Sevilla.—Wheat. 620
- 428 Orejuela, Joaquín de, Utrera, Province of Sevilla.—Wheat, barley, and maize. 620

## Agricultural Products.

- 429 Búrgos, Felipe de, Utrera, Province of Sevilla.—Wheat, barley, and maize. 620
- 430 Rivas, Pedro, Utrera, Province of Sevilla.—Wheat. 620
- 431 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Cereals. 620
- 432 Cuéllar, José Antonio, Utrera, Province of Sevilla.—Wheat, barley, and maize. 620
- 433 Riarola, Rafael, Utrera, Province of Sevilla.—Wheat and barley. 620
- 434 Crespo, Rafael, Utrera, Province of Sevilla.—Wheat and barley. 620
- 435 Saavedra, Francisco, Utrera, Province of Sevilla.—Wheat. 620
- 436 Dominguez, Pedro, Utrera, Province of Sevilla.—Maize. 620
- 437 Royo, Damian, Soria.—Wheat. 620
- 438 Corporation of Villar de Maya, Province of Soria.—Wheat, barley, and oats. 620
- 439 Corporation of Almanzan, Province of Soria.—Wheat, rye, and barley. 620
- 440 Gimenez Justo, Valderrodilla, Province of Soria.—Wheat. 620
- 441 Corporation of Rioseco, Province of Soria.—Wheat. 620
- 442 Corporation of Baraona, Province of Soria.—Wheat and barley. 620
- 443 Carretero, Pedro, Utrilla, Province of Soria.—Wheat. 620
- 444 Ballano, Faustino, Aguaviva, Province of Soria.—Wheat. 620
- 445 Velasco, Francisco, Aguaviva, Province of Soria.—Lamas wheat. 620
- 446 Flour Association of Reus, Province of Tarragona.—Wheat. 620
- 447 Virgili, Pablo, Tarragona.—Urgel wheat, maize, barley, oats, and millet. 620
- 448 Plana, Antonio, & Bro., Reus, Province of Tarragona.—Wheat. 620
- 449 Sedo, Juan Villanova, Reus, Province of Tarragona.—Wheat. 620
- 450 Avila & Marti, Reus, Province of Tarragona.—Wheat. 620
- 451 Saperas, Francisco, Reus, Province of Tarragona.—Wheat. 620
- 452 Marti, Bornas & Co., Reus, Province of Tarragona.—Wheat. 620
- 453 Forasté y Ferré, Juan, Villaseca, Province of Tarragona.—Wheat. 620
- 454 Jausa, Pablo, La Canonja, Province of Tarragona.—Maize. 620
- 455 Domingo, Dimas, Reus, Province of Tarragona.—Maize and barley. 620
- 456 Gatell y Folch, Juan, Altafulla, Province of Tarragona.—Maize. 620
- 457 Mas Blanch, Julio C. de Esteve de, Amposta, Province of Tarragona.—Rice. 620
- 458 Corporation of Amposta, Province of Tarragona.—Rice. 620
- 459 Bignell, Jaime, San Carlos de la Rapita, Province of Tarragona.—Rice. 620
- 460 Soxias y Domenech Juan, Villaseca, Province of Tarragona.—Maize. 620
- 461 Oller, Pedro, Reus, Province of Tarragona.—Maize. 620
- 462 Montaner, Amalio, Reus, Province of Tarragona.—Panic grass. 620
- 463 Margenat, Antonio Bages, Reus, Province of Tarragona.—Millet. 620
- 464 Barenys y Magriñá, Juan Bautista, Villaseca, Province of Tarragona.—Barley. 620
- 465 Fonts, Mariano, Reus, Province of Tarragona.—Barley. 620
- 466 Moreno, Manuel Ortiz, Ocaña, Province of Toledo.—Wheat, barley, and oats. 620
- 467 Fernandez, Manuel, Tembleque, Province of Toledo.—Wheat. 620
- 468 Pasaran, Isidoro, Ollas del Rey, Province of Toledo.—Wheat. 620
- 469 Esteban, Francisco, Toledo.—Summer wheat. 620
- 470 Negrete, Acisclo Fernandez, Villatobas, Province of Toledo.—Wheat and barley. 620
- 471 Serrano y Fernandez, Federica, Madridejos, Province of Toledo.—Summer wheat. 620
- 472 Mejia, Isaac, Ocaña, Province of Toledo.—Summer wheat and barley. 620
- 473 Redondo, Juan Bautista, Carmona, Province of Toledo.—Wheat and barley. 620
- 474 Indo, Valentin Martinez, Argea, Province of Toledo.—Summer wheat. 620
- 475 Campo, Victoriano Martin del, Madridejos, Province of Toledo.—Summer wheat. 620
- 476 Diego, Fabian de, Guadamur, Province of Toledo.—Summer wheat. 620
- 477 Ortiz, Rufo Moreno, Escalonilla, Province of Toledo.—Summer wheat. 620
- 478 Perez, Luis, Toledo.—Summer wheat. 620
- 479 Huelbes y Ortiz, Emilio de, Ocaña, Province of Toledo.—Summer wheat and oats. 620
- 480 Arrue, Miguel, Benaguacil, Province of Valencia.—Wheat. 620
- 481 Reig y Garcia, Fernando, Puebla de Vallbona, Province of Valencia.—Wheat and maize. 620
- 482 Lasala y Palomares, Vicente, Masia de la Mar, Province of Valencia.—Wheat and yellow maize. 620
- 483 Agricultural Society of Valencia, Valencia.—Rice, maize, barley, and oats. 620
- 484 Valdovi, Rafael Gonzalez, Torrente, Province of Valencia.—Maize. 620
- 485 Ferrandis y Soler, José, Onteniente, Province of Valencia.—Maize. 620
- 486 Montealegre, Widow & Son of, Medina del Campo, Province of Valladolid.—Common wheat. 620
- 487 Corporation of Medina del Campo, Province of Valladolid.—Common red wheat. 620
- 488 Rico, Antonio Ceinos, Fontihoyuelo, Province of Valladolid.—Common red wheat. 620
- 489 Monedero, Eusebio, Valoria la Buena, Province of Valladolid.—Wheat. 620

## Agricultural Products.

- 190 Monedero, Ventura, Valoria la Buena, Province of Valladolid.—Summer wheat. 620
- 191 Lozano, Juan, Molacillo, Province of Zamora.—Summer wheat. 620
- 192 Silva, Genaro, Montamarta, Province of Zamora.—Wheat. 620
- 193 Falcon, Felipe, Benavente, Province of Zamora.—Wheat. 620
- 194 Alejano, Salvador Fernandez, Fuentesauco, Province of Zamora.—Summer wheat. 620
- 195 Temprano, José, Vardemarban, Province of Zamora.—Summer wheat. 620
- 196 Marron, José Victor, Alcañices, Province of Zamora.—Wheat. 620
- 197 Rodriguez y Rodriguez, Fernando, Villamayor, Province of Zamora.—Wheat. 620
- 198 Vecinos, Isidoro, Molacillos, Province of Zamora.—Wheat and barley. 620
- 199 Garcia, Miguel, Fuentes Pradas, Province of Zamora.—Summer wheat and common barley. 620
- 200 Angas, Francisco, Candasnos, Province of Zaragoza.—Wheat. 620
- 201 Sasot, Joaquin, Candasnos, Province of Zaragoza.—Wheat. 620
- 202 Grós, José Avio, Candasnos, Province of Zaragoza.—Wheat. 620
- 203 Claver, Mariano, Peñalba, Province of Zaragoza.—Wheat. 620
- 204 Rosas, Manuel, Bujaraloz, Province of Zaragoza.—Summer and acclimated wheat and rye. 620
- 205 Rozas, Eusebio, La Almolda, Province of Zaragoza.—Wheat. 620
- 206 Sampér, Joaquin, Bujaraloz, Province of Zaragoza.—Wheat. 620
- 207 Grós, Mariano, Bujaraloz, Province of Zaragoza.—Wheat. 620
- 208 Peisen, José J., Balfarta, Province of Zaragoza.—Wheat. 620
- 209 Pallas, José, Bujaraloz, Province of Zaragoza.—Wheat. 620
- 210 Escamilla, Segundo, Bujaraloz, Province of Zaragoza.—Wheat. 620
- 211 Buil, José, Castejon de Monegros, Province of Zaragoza.—Wheat. 620
- 212 La Viñaza, Count of, Epila, Province of Zaragoza.—Wheat. 620
- 213 Loring Bros., Malaga.—Wheat. 620
- 214 School of Agriculture, Vitoria, Province of Alava.—Leguminous plants and esculent vegetables. 621
- 215 Aguado, Juan de Dios, Corral Rubio, Province of Albacete.—Lentils and blue vetch. 621
- 216 Ruiz, Santiago, Hellin, Province of Albacete.—Rice. 621
- 217 Verdu y Perez, Joaquin, Monóvar, Province of Alicante.—Esculent vegetables. 621
- 218 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Kidney beans. 621
- 219 Linares, José Ramon, Albánchez, Province of Almeria.—Chick-peas. 621
- 220 Perez, Mariano Valverde, Fontiveros, Province of Avila.—Chick-peas. 621
- 521 Rodriguez Francisco Mariano, Fontiveros, Province of Avila.—Chick-peas. 621
- 522 Sainz, Matias, Donvidas, Province of Avila.—Chick-peas. 621
- 523 Lambas y Gutierrez, Gregorio, Palacios de Goda, Province of Avila.—Chick-peas. 621
- 524 Gonzalez, Manuel, Barco de Avila, Province of Avila.—French peas. 621
- 525 Soto, José Diaz, Cabeza de Vaca, Province of Badajoz.—Chick-peas. 621
- 526 Moreno, Cayetano, Villalba de los Barros, Province of Badajoz.—Chick-peas. 621
- 527 Paredes, Carlos, Guareña, Province of Badajoz.—Beans. 621
- 528 Venegas, Juan, Valle de Matamoros, Province of Badajoz.—Kidney beans. 621
- 529 Tortades, José de, Vich, Province of Barcelona.—Kidney beans. 621
- 530 Fontordera, Juan de, Vich, Province of Barcelona.—Kidney beans. 621
- 531 Mascaró, José, Vich, Province of Barcelona.—Spanish peas. 621
- 532 Picó, Mariano de, Vich, Province of Barcelona.—Leguminous plants and esculent vegetables. 621
- 533 Prat, José, Vich, Province of Barcelona.—Lupine. 621
- 534 Lerda y Daniel, José, Vich, Province of Barcelona.—Spanish peas. 621
- 535 Soler y Stussa, Valentin, Barcelona.—Esculent vegetables. 621
- 536 Garriga, Francisco Domingo, San Quirze de Besora, Province of Barcelona.—Esculent vegetables. 621
- 537 Provincial Deputation of Burgos.—Pipirigallo (*Hedysarum onobrythidis*) and galgana (*lathyrus cicera*). 621
- 538 Commission of the Province of Burgos.—Esculent vegetables. 621
- 539 Arribas, Indalecio Anton, Lerma, Province of Burgos.—True bitter vetch. 621
- 540 Garcia y Garcia, Francisco, Miranda de Ebro, Province of Burgos.—Kidney beans. 621
- 541 Morales, Luis, Miranda de Ebro, Province of Burgos.—Lentils. 621
- 542 Garcia, Antonio Gimenez, Guijo de Santa Barbara, Province of Cáceres.—Chick-peas and kidney beans. 621
- 543 Sande Olivares, Jerónimo de, Garrovillas de Alconetar, Province of Cáceres.—Chick-peas. 621
- 544 Martin, Ramon, Olvera, Province of Cádiz.—Chick-peas. 621
- 545 Perez, Francisco García, Jerez de la Frontera, Province of Cádiz.—Chick-peas, beans and Spanish peas. 621
- 546 Corporation of Tarifa, Province of Cádiz.—Beans. 621
- 547 Provincial Commission, Isle of Tenerife, Canary Islands.—Chick-peas. 621
- 548 Leon, Juan Ponce de, Isle of Gran Canaria, Canary Islands.—Kidney beans and chick-peas. 621
- 549 Quevedo, José C., Isle of Gran Canaria, Canary Islands.—Kidney beans and chick-peas. 621

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- 550 Vega Grande, Count of, Isle of Gran Canaria, Canary Islands.—Kidney beans. 621
- 551 Provincial Board of Agriculture, Castellon.—Esculent vegetables. 621
- 552 Rubisco, Cayetano Clemente, Ciudad Real.—Beans. 621
- 553 Las Cabezuelas, Count of, Campo de Criptana, Province of Ciudad-Real.—Beans. 621
- 554 Cabanas y Blanco, Rafael, Córdoba.—Esculent vegetables. 621
- 555 Matilla, Carlos, Córdoba.—Lupine and Spanish peas. 621
- 556 Prieto, Sebastian, Encinas Reales.—Chick-peas and beans. 621
- 557 Corporation of Cabra, Province of Córdoba.—Esculent vegetables. 621
- 558 Gimenez, José Maria, Baena, Province of Córdoba.—Beans and chick-peas. 621
- 559 Barrionuevo, Fernando, Córdoba.—Moorish beans. 621
- 560 San Bernardo, Count of, Córdoba.—Moorish beans. 621
- 561 Vallejo, Rafael, Córdoba.—Moorish beans. 621
- 562 Pacheco, Rafael Granados, Benaméjor, Province of Córdoba.—Beans. 621
- 563 Poyato, Manuel, Zuheros, Province of Córdoba.—Chick-peas. 621
- 564 Escribano, Luis, Pozoblanco, Province of Córdoba.—Chick-peas. 621
- 565 Blanco, Alfonso, Dos-Torres, Province of Córdoba.—Chick-peas. 621
- 566 Torrico, Manuel, Hinojosa, Province of Córdoba.—Chick-peas. 621
- 567 Sanz y Calatañazor, Jerónimo Córdoba.—Chick-peas. 621
- 568 Conde, Juan, Córdoba.—True bitter vetch. 621
- 569 Carrillo, Librado, Priego, Province of Córdoba.—White kidney beans. 621
- 570 Masó y Soler, Felix, Blanes, Province of Gerona.—Esculent vegetables. 621
- 571 Sanchez, Juan Francisco, Sigüenza, Province of Guadalajara.—Flesh-colored kidney beans. 621
- 572 Gil, Santiago, Sigüenza, Province of Guadalajara.—White kidney beans. 621
- 573 Heras, Angel Ayuso de las, Valdearenas, Province of Guadalajara.—Kidney beans. 621
- 574 Reyes y Rich, Juan, Guadalajara.—Beans. 621
- 575 Soldan, Antonio, La Palma, Province of Huelva.—Esculent vegetables. 621
- 576 Riera y Fernandez, José, Huelva.—Esculent vegetables. 621
- 577 Carrasco, José Maria, Bonares, Province of Huelva.—Beans. 621
- 578 Otal, José Maria, Castillo de Carabineros, Province of Huesca.—Chick-peas and beans. 621
- 579 Paula Bulnes, Francisco de, Cazorla, Province of Jaen.—Chick-peas. 621
- 580 Vasquez, Francisco, Cazorla, Province of Jaen.—Chick-peas. 621
- 581 Quesada y Salazar, Pedro de, Valdepeñas, Province of Jaen.—Chick-peas. 621
- 582 Quesada, Carlos Garcia de, Valdepeñas, Province of Jaen.—Chick-peas. 621
- 583 Estéban y Balen, Andrés, Navas de San Juan, Province of Jaen.—Chick-peas. 621
- 584 Herreros, Juan Ignacio, Izatorof, Province of Jaen.—Chick-peas. 621
- 585 Higuera, José, Los Villares, Province of Jaen.—Lentils. 621
- 586 Prado, Máximo Alonso de, Leon.—Esculent vegetables. 621
- 587 Corporation of Vega de Infanzones, Leon.—Kidney beans. 621
- 588 Corporation of Valdefresno, Province of Leon.—Chick-peas and kidney beans. 621
- 589 Corporation of Arganza, Province of Leon.—Chick-peas and kidney beans. 621
- 590 Corporation of Congosto, Province of Leon.—Chick-peas and kidney beans. 621
- 591 Corporation of Mansilla Mayor, Province of Leon.—Chick-peas and kidney beans. 621
- 592 Corporation of Villaturriel, Province of Leon.—Chick-peas and kidney beans. 621
- 593 Corporation of Valverde del Camino, Province of Leon.—Chick-peas and kidney beans. 621
- 594 Corporation of Mansilla de las Mulas, Province of Leon.—Chick-peas and kidney beans. 621
- 595 Corporation of Ponferrada, Province of Leon.—Chick-peas and kidney beans. 621
- 596 Corporation of Encinado, Province of Leon.—Kidney beans. 621
- 597 Corporation of Pajares de los Oteros, Province of Leon.—Chick-peas. 621
- 598 Corporation of Magaz, Province of Leon.—Kidney beans. 621
- 599 Corporation of Omaña, Province of Leon.—Kidney beans. 621
- 600 Fernandez, Tomás, Armunia, Province of Leon.—Kidney beans and chick-peas. 621
- 601 Nufiez, Lino, Sahagun, Province of Leon.—Kidney beans. 621
- 602 Santos, Pablo, Fuentes de los Oteros, Province of Leon.—Kidney beans. 621
- 603 Oliveres, Mauricio, Torreserona, Province of Lérida.—Kidney beans on the vine. 621
- 604 Lu, Ambrosio, Albasa, Province of Lérida.—Kidney beans. 621
- 605 Jover, Luisa de, Tárrega, Province of Lérida.—Kidney beans. 621
- 606 Ignès, Pedro, Cervera, Province of Lérida.—Blue vetch. 621
- 607 Freire, Manuel Soto, Pantón, Province of Lugo.—Chick-peas and beans. 621
- 608 Pillado, Elisteo Martinez, Fox, Province of Lugo.—Beans. 621
- 609 Martinez, Ramon Antonio, Sarria, Province of Lugo.—Kidney beans. 621

## Agricultural Products.

- 610 Moreno, Ramon Armesto, Puebla del Brollon, Province of Lugo.—Colored kidney beans. 621
- 611 Valcarcel, Teresa Pardo, Sarifao, Province of Lugo.—Chick-peas. 621
- 612 Corporation of Puebla de Brollon, Province of Lugo.—Beans. 621
- 613 Mendes, Alejo Perez, Monforte, Province of Lugo.—Chick-peas. 621
- 614 Calatrava, Francisco Garcia, Alcobendas, Province of Madrid.—Chick-peas. 621
- 615 Pascual, Elias, Alfarnate, Province of Málaga.—Chick-peas. 621
- 616 Marin, Juan F. Garcia, Caravaca, Province of Murcia.—Kidney beans. 621
- 617 Anta, Ignacio, Orense.—Beans. 621
- 618 Rodriguez, Manuel Iglesias, Celanova, Province of Orense.—Esculent vegetables. 621
- 619 Rodriguez y Gomez, Camilo, Ginzo de Limia, Province of Orense.—Chick-peas. 621
- 620 Rey, Manuel Pereiro, Rivela, Province of Orense.—Kidney beans. 621
- 621 Iglesias, Ramon, Canedo y Veiro, Province of Orense.—Kidney beans. 621
- 622 Provincial Board of Agriculture, Oviedo.—Kidney beans and peas. 621
- 623 Llanos, Andrés, Saldaña, Province of Palencia.—Chick-peas and French peas. 621
- 624 Carrasco, Antolin Galan, Carrion, Province of Palencia.—Chick-peas. 621
- 625 Carande, Isidoro, Nogal de las Huertas, Province of Palencia.—Chick-peas. 621
- 626 Garcia, Ignacio, Herrera del Rio Pisuerga, Province of Palencia.—White French peas. 621
- 627 Gallego, Felix, Cevico de la Torre, Province of Palencia.—White French peas. 621
- 628 Gutierrez Juan Francisco, Palencia.—White French peas. 621
- 629 Monedero, Juan, Quintana del Puente, Province of Palencia.—Carrobs. 621
- 630 Ortega, Demetrio, Palencia.—Beans. 621
- 631 Gutierrez, Calisto, Palencia.—Beans. 621
- 632 Rivas, Galo Ruiz, Province of Palencia.—Peas. 621
- 633 Colambres, Genaro, Perales, Province of Palencia.—True bitter vetch. 621
- 634 Onís, Federico, Cantalapiedra, Province of Salamanca.—Esculent vegetables. 621
- 635 Toribio, Antonio Martin, Villares de la Reina.—Chick peas, lentils, and beans. 621
- 636 Carbayo, Luis, San Cristobal de la Cuesta, Province of Salamanca.—Lentils and chick-peas. 621
- 637 Nieto, Francisco Hernandez, Bóveda del Rio Almar, Province of Salamanca.—Chick-peas. 621
- 638 Garcia, Rafael, Cantalapiedra, Province of Salamanca.—Chick-peas. 621
- 639 Ronco, Gregorio, Ragama, Province of Salamanca.—Chick-peas. 621
- 640 Terrero, Santiago Juanes, Villares, Province of Salamanca.—Chick-peas. 621
- 641 Salvados, Gaspar Diaz, Villaflores, Province of Salamanca.—Chick-peas. 621
- 642 Mayoral, Andrés, Los Huelmos, Province of Salamanca.—Chick-peas. 621
- 643 Poveda, Paulino, Pedroso, Province of Salamanca.—Chick-peas. 621
- 644 Garcia, Angel, Cantalapiedra, Province of Salamanca.—Peas. 621
- 645 Rodriguez, Zacarias, Cantalapiedra, Province of Salamanca.—Carrobs. 621
- 646 Fuentes, José, La Pinilla, Province of Salamanca.—Black peas. 621
- 647 Hernandez, Vicente, Cantalapiedra, Province of Salamanca.—Peas. 621
- 648 Iglesias, Angel, Monterrubio de Armuña, Province of Salamanca.—Lentils. 621
- 649 Hernandez, Baldomero, Parada de Rubides, Province of Salamanca.—Beans. 621
- 650 Gomez, Miguel Martin, Baliso, Province of Segovia.—Chick-peas. 621
- 651 Gimenez Isidro, Villacastin, Province of Segovia.—Chick-peas. 621
- 652 Linares, Salvador & Alejandro, Burgillos & Alcalá del Rio, Province of Sevilla.—Beans and Spanish peas. 621
- 653 Velasco, Ramon, Carmona, Province of Sevilla.—Chick-peas. 621
- 654 Olivares, Manuel Garcia, Olivares, Province of Sevilla.—Chick-peas. 621
- 655 Ojeda, Manuel, Sevilla.—Chick-peas. 621
- 656 Leon, Manuel Gimenez, Viso del Alcor, Province of Sevilla.—Chick-peas. 621
- 657 Terán, Francisco Collantes de, Alcalá de Guadaira, Province of Sevilla.—Chick-peas. 621
- 658 Puig, Juan, Sevilla.—Chick-peas. 621
- 659 Ojeda y Gomez, Juan, Sevilla.—Chick peas. 621
- 660 Orejuela, Joaquin de, Utrera, Province of Sevilla.—Chick-peas and Spanish peas. 621
- 661 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Esculent vegetables. 621
- 662 Amores, Manuel, Salteras y Olivares, Province of Sevilla.—Esculent vegetables. 621
- 663 Perez y Serrano, Miguel, Olivares, Province of Sevilla.—Chick-peas and Spanish peas. 621
- 664 Muñoz y Leon, Antonio, Moran, Province of Sevilla.—Chick-peas. 621
- 665 Mendez, Felipe, Mairena del Alcor, Province of Sevilla.—Chick-peas. 621
- 666 Saavedra, Francisco, Utrera, Province of Sevilla.—Chick-peas. 621
- 667 Lavado, Antonio, Fernandez, Agudule, Province of Sevilla.—Beans. 621
- 668 Alcaraz, Manuel de, Osuna, Province of Sevilla.—Beans. 621
- 669 Rivas, Pedro de, Utrera, Province of Sevilla.—Beans. 621
- 670 Gonzalez, Rafael, Sevilla.—Beans. 621

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- 672 Saavedra, José Maria, Mairena del Alcor, Province of Sevilla.—Beans. 621
- 673 Torres, Andrés Villalon, Moron, Province of Sevilla.—Beans and Spanish peas. 621
- 674 Viñaz, José Maria Gimenez, Mairena del Alcor, Province of Sevilla.—Spanish peas. 621
- 675 Burgós, Felipe de, Utrera, Province of Sevilla.—Spanish peas. 621
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- 678 Lenguas, Pablo, Soria.—Blue vetch. 621
- 679 Barenys y Mariné, José, Vilaseca, Province of Tarragona.—Beans and peas. 621
- 680 Fausa, Pablo, La Canonja, Province of Tarragona.—Blue vetch, lentils, and Lima beans. 621
- 681 Virgili, Pablo, Tarragona.—Kidney beans, Lima beans, and blue vetch. 621
- 682 Gil, Francisco, Reus, Province of Tarragona.—Beans. 621
- 683 Prieto, Eusebio, Reus, Province of Tarragona.—Spanish peas and blue vetch. 621
- 684 Oller, Pedro, Reus, Province of Tarragona.—Peas, beans, and true bitter vetch. 621
- 685 Grau y Plá, José, Reus, Province of Tarragona.—Peas, beans, and true bitter vetch. 621
- 686 Montaner, Amallo, Reus, Province of Tarragona.—Beans. 621
- 687 Soria y Domenech, Juan, Vilaseca, Province of Tarragona.—Kidney beans. 621
- 688 Monner, Juan, La Riera, Province of Tarragona.—Kidney beans. 621
- 689 Pullés, Antonio Morera, & Son, Tarragona.—Chick-peas. 621
- 690 Llorba, Juan Bautista, Uldemolins, Province of Tarragona.—Chick-peas. 621
- 691 Vidal y Bas, Benito, Province of Tarragona.—Beans. 621
- 692 Fonts, Mariano, Reus, Province of Tarragona.—Beans. 621
- 693 Margenas, Antonio Bages Reus, Province of Tarragona.—Kidney beans. 621
- 694 Perez, Lino, Toledo.—Kidney beans and chick-peas. 621
- 695 Basarán, Isidoro, Ollas del Rey, Province of Toledo.—Blue vetch. 621
- 696 Society of Agriculture, Valencia.—Esculent vegetables. 621
- 697 Palomares, Vicente Lassala, Masia de la Mar, Province of Valencia.—Beans and carrobs. 621
- 698 Lassala y Camp, Vicente, Alboraya, Province of Valencia.—Beans. 621
- 699 Alborns y Alborns, Carlos, Picasent, Province of Valencia.—Carrobs. 621
- 700 Ferrandis y Soler, Onteniente, Province of Valencia.—Carrobs. 621
- 701 Casta, Joaquín Pardo de la, Tavernes, Province of Valencia.—Carrobs. 621
- 702 Baldoví, Rafael Gonzales, Torrente, Province of Valencia.—Carrobs. 621
- 703 Arrue, Miguel, Benguacil, Province of Valencia.—Kidney beans. 621
- 704 Vaca, Francisco Cabeza de, Puente Duero, Province of Valladolid.—Chick-peas. 621
- 705 Lecanda, Eloy, Valbuena de Duero, Province of Valladolid.—Chick-peas. 621
- 706 Cocho, Tiburcio, Santovenia, Province of Valladolid.—Blue vetch and lentils. 621
- 707 Corporation of Puentesauco, Province of Zamora.—Chick-peas. 621
- 708 Mateos, Facundo Martin, Puentesauco, Province of Zamora.—Chick-peas. 621
- 709 Bausela, Estéban Garcia, Castroverde, Province of Zamora.—Chick-peas. 621
- 710 Poey, Juan, Habana, Cuba.—Vegetables of the country. 621
- 711 Sereis, Eduardo Campoa, Alicante.—Carrobs. 621
- 712 Llampallas, Antonio, Massos, Province of Barcelona.—Carrobs. 621
- 713 Escoda y Teixido, Antonio, Vilaseca, Province of Tarragona.—Carrobs. 621
- 714 Freixa, Sebastian, Reus, Province of Tarragona.—Carrobs. 621
- 715 Salvado, Salvador, Rindoma, Province of Tarragona.—Carrobs. 621
- 716 Monserrat y Cavallé, José, San Carlos de la Rapita, Province of Tarragona.—Carrobs. 621
- 717 Ibern y Rovira, José, Torredembarra, Province of Tarragona.—Carrobs. 621
- 718 Montaña, Francisco Roca, Cambrils, Province of Tarragona.—Carrobs. 621
- 719 Corporation of Amposta, Province of Tarragona.—Carrobs. 621
- 720 Bassedas y Andreu, Miguel, Ram, Province of Tarragona.—Carrobs. 621
- 721 Zaforta, Juan Burguez, Palma, Balearic Islands.—Carrobs. 621
- 722 Diego, Francisco Polep, Jativa, Province of Valencia.—Carrobs and photograph of the carrob tree. 621
- 723 Diego y Carsi, Ignacio & José, Jativa, Province of Valencia.—Carrobs. 621
- 724 Llandes, Mariano Ontoneda, Jativa, Province of Valencia.—Carrobs. 621
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- 726 Gonzales, Manuel, Barco de Avila, Province of Avila.—Onions. 621
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- 728 Board of Agriculture of the Province of Castellón.—Garlic. 621
- 729 Montoya, Vicente Llopis, Castellón.—Peanuts. 621



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- 31 Aensio, Ramon, Caravaca, Province of Murcia.—Potatoes. 622
- 32 Vila, Francisco, Viana del Bollo, Province of Orense.—Potatoes. 622
- 33 Rodriguez, Manuel Iglesias, Celanova, Province of Orense.—Tubers. 622
- 34 Rey, Manuel Pereiro, Orense.—Onions. 622
- 35 Carraura, Ramon, Cantalapedra, Province of Salamanca.—Beet-roots. 622
- 36 Torre Ajero, Mariano & Cipriano de la, Arroyo de Cuéllar, Province of Segovia.—Madder-root. 622
- 37 Moreno, Santiago Merino, Berlanga de Duero, Province of Soria.—Onions, garlic, and potatoes. 622
- 38 Fonta, Mariano, Reus, Province of Tarragona.—Garlic. 622
- 39 Redondo, Juan Bautista, Carmena, Province of Toledo.—Potatoes. 622
- 40 Society of Agriculture of Valencia. Licorice-root, peanuts, edible cyperus, and garlic. 622
- 41 Lassala y Camps, Vicente, Alboraya, Province of Valencia.—Edible cyperus. 622
- 42 Dios Quemada, Juan de, & Sons, Vilovia, Province of Valladolid.—Madder-root. 622
- 43 National Manufactory of Tobacco, Alicante.—Tobacco. 623
- 44 Corral, Luis Marrin del, La Laguna, Canary Islands.—Tobacco. 623
- 45 Mendez, Benigno Dominguez, Valverde, Canary Islands.—Tobacco. 623
- 46 Garcia, Domingo, Orotava, Canary Islands.—Tobacco. 623
- 47 Lugo, Luis Benitez de, Orotava, Canary Islands.—Tobacco. 623
- 48 Society "El Porvenir Agrícola," Isle of Gran Canaria, Canary Islands.—Leaf-tobacco and cigars. 623
- 49 Olivares, José del Castillo, Telde, Canary Islands.—Coffee. 623
- 50 Armas, Antonio, Valle de Agaete, Canary Islands.—Coffee. 623
- 51 Barrenengoa, Dámaso, Ciudad-Real.—Coffee. 623
- 52 Ortiz, Juan, Almodóvar del Pinar, Province of Cuenca.—Saffron. 623
- 53 Chillaron, Silvestre, Villarejo de Fuentes, Province of Cuenca.—Saffron. 623
- 54 Redondo, Peregrin, Valverde de Fúcar, Province of Cuenca.—Saffron. 623
- 55 Corporation of Llífolá, Province of Lérida.—Chamomile flowers. 623
- 56 Liné y Canes, José, Llífolá, Province of Lérida.—Chamomile flowers. 623
- 57 Mar, Ramon, Lérida.—Chamomile flowers. 623
- 58 National Manufactory of Tobacco, Madrid.—Tobacco. 623
- 59 Meric & Co., Colonial Company, Madrid.—Ground coffee. 623
- 60 Menchero, Eduardo, Cartagena, Province of Murcia.—Spanish opium. 623
- 761 National Manufactory of Tobacco, Sevilla.—Tobacco. 623
- 762 Corporation of La Puebla de Eca, Province of Soria.—Saffron. 623
- 763 Corporation of Valtueña, Province of Soria.—Saffron. 623
- 764 National Manufactory of Tobacco, Valencia.—Tobacco. 623
- 765 Leon, José, Rocafort, Province of Valencia.—Tobacco. 623
- 766 Masía, Francisco, Requena, Province of Valencia.—Saffron. 623
- 767 Gomez, Bernardo, Requena, Province of Valencia.—Saffron. 623
- 768 Piñango, Norberto, Requena, Province of Valencia.—Saffron. 623
- 769 Central Commission of the Island of Cuba, Habana, Cuba.—Leaf-tobacco. 623
- 770 Bock & Co., Habana, Cuba.—Tobacco. 623
- 771 Allones, Ramon, Habana, Cuba.—Tobacco. 623
- 772 Arrigunaga, Fernando, Habana, Cuba.—Tobacco. 623
- 773 Gené, José, Habana, Cuba.—Tobacco. 623
- 774 Upmann, H. & Co., Habana, Cuba.—Tobacco. 623
- 775 Romero, Juan, Bernabé, Habana, Cuba.—Tobacco. 623
- 776 Morales, José, Habana, Cuba.—Tobacco. 623
- 777 Jané, Manuel, Habana, Cuba.—Tobacco. 623
- 778 Valle, Suarez & Co., Habana, Cuba.—Tobacco. 623
- 779 Tolosa, Enrique, & Bro., Habana, Cuba.—Tobacco. 623
- 780 Asay, Celestino, Habana, Cuba.—Tobacco. 623
- 781 Diaz, Bances & Co., Habana, Cuba.—Tobacco. 623
- 782 Alvarez, Julian, Habana, Cuba.—Tobacco. 623
- 783 Murias, Pedro, & Co., Habana, Cuba.—Tobacco. 623
- 784 Rio, J. P. del, & Co., Habana, Cuba.—Tobacco. 623
- 785 Camino, Cuesta, & Co., Habana, Cuba.—Cigarettes. 623
- 786 Ortiz, Isidoro, Habana, Cuba.—Cigarettes. 623
- 787 Poey, Juan, Habana, Cuba.—Coffee. 623
- 788 Brotons, Bros., Orihuela, Province of Alicante.—Ground pepper. 623
- 789 Velasco, Cayetano Sabater, Murcia.—Ground pepper. 623
- 790 Laorden, Juan Bernabé, Murcia.—Ground pepper. 623
- 791 Bágüena, Joaquin, Murcia.—Ground pepper. 623
- 792 Arjona y Gomez, Jesús, Jaraiz de la Vera, Province of Cáceres.—Ground pepper. 623
- 793 Parrales, Valentin, Jaraiz de la Vera, Province of Cáceres.—Ground pepper. 623

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- 795 Enciso, Angel Morales, Jaraiz de la Vera, Province of Cáceres.—Ground pepper. 623
- 796 Jabon, Blas., Jaraiz de la Vera, Province of Cáceres.—Ground pepper. 623
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- 805 Prieto, Sebastian, Encinas Reales, Province of Córdoba.—Anise-seed. 624
- 806 Conde, Juan, Córdoba.—Flax seed and beneseed. 624
- 807 Aviléz y Merino, Francisco, Córdoba.—Fleawort and mustard seed. 624
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- 810 Fernandez de Villalta, Antonio, Torre Don Jimeno, Province of Jaen.—Anise and lavender seed. 624
- 811 Corporation of Pozo Alcon, Province of Jaen.—Cumin-seed. 624
- 812 Ferreira, Antonio, Mondoñedo, Province of Lugo.—Furze-seed. 624
- 813 Paradela, Domingo, Castroverde, Province of Lugo.—Linseed. 624
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- 914 Cepeda, Ignacio, Almonte, Province of Huelva.—Honey. 654
- 915 Castillo, Juan Herrera, Cartaya, Province of Huelva.—Honey. 654
- 916 Alvarez, José María, Cartaya, Province of Huelva.—Honey. 654
- 917 Fernandez, Francisco, Cartaya, Province of Huelva.—Honey. 654
- 918 Vasquez, Bartolomé, Villanueva de los Castillejos, Province of Huelva.—Honey. 654
- 919 Serrano, José Lorenzo, Zalamea la Real, Province of Huelva.—Wax. 654
- 920 Miñón, Pedro Alonso, Leon.—Honey. 654
- 921 Martínez, Juan Panero, Astorga, Province of Leon.—Wax. 654
- 922 Monforte, Andrés Andrade, Province of Lugo.—Honey. 654
- 923 Lopez, Manuel Gonzalez, Incio, Province of Lugo.—Honey. 654
- 924 Corporation of Valle de Oro, Province of Lugo.—Wax. 654
- 925 Tato, Manuel, Lugo.—Wax. 654
- 926 Portillo, Serafín Rodriguez, Madrid.—Ornamental wax candles. 654
- 927 Provincial Deputation, Murcia.—Honey. 654
- 928 Velasco, Manuel, Verin, Province of Orense.—Honey. 654
- 929 Robo, Modesto Perez, Verin, Province of Orense.—Wax. 654
- 930 Caramés, José García, Forcarey, Province of Pontevedra.—Wax. 654
- 931 Corbalán, Juan, Saucelle, Province of Salamanca.—Honey. 654
- 932 Sanchez, Rosa Hernandez, La Hinojosa, Province of Salamanca.—Honey. 654
- 933 García, José Sanchez, Fregeneda, Province of Salamanca.—Honey. 654
- 934 Gascon, Andrés Sanchez, Cepeda, Province of Salamanca.—Wax. 654
- 935 Roman, José Palacios, Coronil, Province of Sevilla.—Honey. 654
- 936 Ramos, Eustaquio, Soria.—Honey and wax. 654
- 937 Aguirre, Simon, Soria.—Honey. 654
- 938 Perez, Vicente Antonio, Talavera de la Reina, Province of Toledo.—Wax candles and wax. 654
- 939 Lecanda, Eloy, Valbuena de Duero, Province of Valladolid.—Honey. 654
- 940 Domec, Gregorio, Zuera, Province of Zaragoza.—Honey. 654
- 941 Izquierdo, Nicolás, Zuera, Province of Zaragoza.—Honey. 654
- 942 Poey, Juan, Habana, Cuba.—Honey. 654
- 943 Vegüer y Naguer, Juan, Habana, Cuba.—Honey. 654
- 944 Central Commission, Habana, Cuba.—Honey. 654
- 945 Carratalá, Francisco, San Juan, Province of Alicante.—Olives. 656
- 946 Girones, Manuela, Agost, Province of Alicante.—Olives. 656
- 947 Samper, Ramon, Muchamiel, Province of Alicante.—Olives. 656
- 948 Espinós, Joaquin, & Co., Ondara y Beniarbeig, Province of Alicante.—Muscadel raisins. 656
- 949 Almodóvar, Antonio Sanchez, Alicante.—Preserves. 656
- 950 Bernabeu y Diego, Juan B., Jabea, Province of Alicante.—Raisins. 656
- 951 Verdú y Perez, Joaquin, Monóvar, Province of Alicante.—Dried figs. 656
- 952 Lerin, Eduardo Campos, Alicante, Dried figs. 656
- 953 Miralles, Clemente, Alicante.—Vegetable preserves. 656
- 954 García, Manuel, Elche, Province of Alicante.—Fig bread and dates. 656
- 955 Benito, Juan Bautista Pina, Monforte, Province of Alicante.—Figs. 656
- 956 Meson, José, Arenas de San Pedro, Province of Avila.—Olives. 656
- 957 Vaca, José, Badajoz.—Ham. 656
- 958 Terron, Jacinto, Badajoz.—Pork sausages and black pudding. 656
- 959 Maria, Juan Martinez Santa, Berquillos, Province of Badajoz.—Dried beef and sausages. 656
- 960 Sanabria, José, Badajoz.—Sausages. 656
- 961 Visa, Agustin, Mahon, Balearic Islands.—Sausages. 656
- 962 Roca, Bartolomé, Palma, Balearic Islands.—Vegetable preserves. 656
- 963 Arrom, Lorenzo, Llubi, Balearic Islands.—Vegetable preserves. 656
- 964 Puig & Llagostera, Barcelona.—Preserved olives. 656
- 965 Trias y Travesa, José, Masnou, Barcelona.—Dessicated vegetables. 656
- 966 Vernis, Jaime, Vich, Province of Barcelona.—Preserved meats. 656
- 967 Luna, José, La Rambla, Province of Barcelona.—Preserved fruits, vegetables, etc. 656
- 968 Parent Bros., Barcelona.—Fruits in liquors and sweetmeats. 656
- 969 Castell, Joaquin Pedrosa de, Esparraguera, Province of Barcelona.—Olives. 656
- 970 Provincial Commission, Miranda de Ebro, Province of Burgos.—Preserved fruits. 656
- 971 Olivares, Jeronimo de Sande, Garrovillas de Alconetar, Province of Cáceres.—Pork sausages. 656
- 972 García, Antonio Gimenez, Guijo de Santa Barbara, Province of Cáceres.—Preserved fruits. 656
- 973 Cuevas, Joaquin de las, Puerto Real, Province of Cadiz.—Sausages. 656
- 974 Provincial Board of Agriculture, Castellon.—Dried figs. 656
- 975 Agulla y Aguila, Santiago, Villarubia de los Ojos, Province of Ciudad Real.—Olives. 656
- 976 Puzin Bros., Córdoba.—Fruits in syrup. 656
- 977 Lara, Rafael J. de, Córdoba.—Olives. 656

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- 978 San Bernardo, Count of, Córdoba.—Olives. 656
- 979 Cabezas y Sarabia, José, Córdoba.—Olives. 656
- 980 Albeary Ward, Francisco, Montilla, Province of Córdoba.—Prunes. 656
- 981 Plaza, Juan Antonio, Montoro, Province of Córdoba.—Olives. 656
- 982 Alvarez, Rafael Ceballos, Adamuz, Province of Córdoba.—Olives. 656
- 983 Blanco, José Maria, Santiago, Province of La Coruña.—Quince marmelade. 656
- 984 Cotofofe, Miguel, Coruña.—Preserved meats and birds. 656
- 985 Garcia & Piñon, Coruña.—Preserved meats and birds. 656
- 986 Romero & Ferrin, Coruña.—Alimentary preserves. 656
- 987 Gomes y Gomes, Enrique, Lope, Province of Huelva.—Figs. 656
- 988 Cruz, Rafael Triana de la, Huelva.—Figs. 656
- 989 Corporation of Cartaya, Province of Huelva.—Figs. 656
- 990 Vasquez, Bartolomé, Villanueva, de los Castillejos, Province of Huelva.—Figs. 656
- 991 Mesa, Francisco Carrion, Huelva.—Fruits in brandy. 656
- 992 Carnes, Eulogio Martin, Aracena, Province of Huelva.—Hams. 656
- 993 Moreno, Maria, Casoria, Province of Jaen.—Figs. 656
- 994 Barrutia, Elias, Casoria, Province of Jaen.—Figs. 656
- 995 Romerotoro, Marquis of, Alcaudete, Province of Jaen.—Dried apples and prunes. 656
- 996 Elvira, José, Logroño.—Peach jam. 656
- 997 Moreno, Juan Miguel, Calahorra, Province of Logroño.—Vegetable preserves. 656
- 998 Ocon, Miguel, Calahorra, Province of Logroño.—Vegetable preserves. 656
- 999 Muro, Paulino, Calahorra, Province of Logroño.—Vegetable preserves. 656
- 1000 Provincial Commission, Jover, Province of Lugo.—Ham. 656
- 1001 Gimenez, Lucio Chapresto, Marbella, Province of Málaga.—Figs. 656
- 1002 Gomez, Antonio J., Málaga.—Muscatel raisins. 656
- 1003 Kreialer, Juan, Málaga.—Raisins. 656
- 1004 Gros, Federico, & Co., Málaga.—Raisins. 656
- 1005 Huelin, Guillermo, & Son, Málaga.—Muscatel raisins. 656
- 1006 Provincial Deputation, Murcia.—Olives. 656
- 1007 Fuentes y Ponte, Javier, Murcia.—Olives. 656
- 1008 Abarca, Gerónimo Vidal, Alhama, Province of Murcia.—Fig bread 656
- 1009 Escudero, Tomás, Corella, Province of Navarra.—Preserved capicum and tomatoes. 656
- 1010 Gayoso, Tomás Ramon, Rante, Province of Orense.—Peeled and dried chestnuts. 656
- 1011 Rey, Manuel Pereiro, Orense.—Olives. 656
- 1012 Santamarina, José, Verin, Province of Orense.—Olives. 656
- 1013 Anta, Ignacio, Orense.—Peeled and dried chestnuts. 656
- 1014 Romero, Joaquin Perez, Santa Cruz de la Rabeda, Province of Orense.—Peeled and dried chestnuts. 656
- 1015 Provincial Board of Agriculture, Industry, and Commerce, Cangas de Tineo, Province of Oviedo.—Ham. 656
- 1016 Diaz Juan, Oviedo.—Sweetmeats. 656
- 1017 Arcadun & Co., Villagarcía, Province of Pontevedra.—Preserved partridge and veal. 656
- 1018 Martinez, Joaquin, Pontevedra.—Vegetable preserves. 656
- 1019 Onís, Federico de, Cantalapiedra, Province of Salamanca.—Fruit syrup. 656
- 1020 Martin, Lorenzo Calvo, Mogarraz, Province of Salamanca.—Figs. 656
- 1021 Paulino, Cipriano Perez, Fregeneda, Province of Salamanca.—Prunes. 656
- 1022 Molina's Widow & Son, Sevilla.—Olives. 656
- 1023 Carmona, Manuel, Sevilla.—Olives. 656
- 1024 Orihuela, Pedro, Sevilla.—Olives. 656
- 1025 Fernandez, Joaquin, Sevilla.—Olives. 656
- 1026 Garcia, Sebastian, Scala Dei, Province of Tarragona.—Dried fruits. 656
- 1027 Gatell y Folch, Juan, Altafulla, Province of Tarragona.—Olives. 656
- 1028 Fonts, Mariano, Reus, Province of Tarragona.—Olives and pimenton (ground fruit of the pepper plant). 656
- 1029 Serra, Olegario, Reus, Province of Tarragona.—Fruits in syrup. 656
- 1030 Esteve, D. A., Widow & Son of, Reus, Province of Tarragona.—Olives. 656
- 1031 Montaner, Amallo, Reus, Province of Tarragona.—Olives. 656
- 1032 Grau y Fló, José, Reus, Province of Tarragona.—Olives. 656
- 1033 Roca Vinardell, Tortosa, Province of Tarragona.—Preserved fruits. 656
- 1034 Pellicer, Francisco, Porrera, Province of Tarragona.—Figs. 656
- 1035 Coll, José, Valls, Province of Tarragona.—Muscatel raisins. 656
- 1036 Basarán, Isidoro, Olias del Rey, Province of Toledo.—Prunes. 656
- 1037 Capsir, José Damian, Puebla de Rugat, Province of Valencia.—Preserved fruits. 656
- 1038 Estellés, Gerardo, Játiva, Province of Valencia.—Muscatel raisins. 656
- 1039 Stárico y Ruiz, Ricardo, Ribarroja, Province of Valencia.—Fig bread. 656

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- 1040 Lassala y Palomares, Vicente, Masia de la Mar, Province of Valencia.—Figs. 656
- 1041 Cañamás, Blas Antonio, Province of Valencia.—Muscatel raisins. 656
- 1042 Artigues, Serapio, Játiva, Province of Valencia.—Muscatel raisins. 656
- 1043 Fabiá, Manuel Andrés, Torrente, Province of Valencia.—Grape syrup. 656
- 1044 Martí, Enrique, Alcira, Province of Valencia.—Vegetable preserves. 656
- 1045 Espinós, Joaquín, & Co., Godella, Province of Valencia.—Muscatel raisins. 656
- 1046 Vives y Aspiroz, Rafael, Villa de Oliva, Province of Valencia.—Muscatel raisins. 656
- 1047 Calabuig, Bartolomé, Bocariente, Province of Valencia.—Muscatel raisins. 656
- 1048 Valencian Society of Agriculture, Valencia.—Dried fruits. 656
- 1049 García, Miguel, Zamora.—Fruits in syrup. 656
- 1050 Perez, Bárbara, Zamora.—Hams and pork sausages. 656
- 1051 Gasca y Beltran, Joaquin, Zaragoza.—Preserved fruits. 656
- 1052 Royo, Mariano, Zaragoza.—Preserved strawberries. 656
- 1053 Costa & Co., Habana, Cuba.—Preserved fruits. 656
- 1054 Bosehi, Juan, & Co., Habana, Cuba.—Preserved fruits. 656
- 1055 Casado, F. N., Malaga.—Raisins. 656
- 1056 Mark, Joah A., Malaga.—Raisins. 656
- 1057 Catala, Antonio, Jabea, Province of Alicante.—Muscatel raisins. 656
- 1058 Bolufer, Cristobal, Jabea, Province of Alicante.—Muscatel raisins. 656
- 1059 Girones y Domenech, Manuel, Alicante.—Sugared almonds. 656
- 1060 Ruidavets y Femenias, Francisco, Mahon, Balearic Islands.—Nougat. 656
- 1061 Visa, Agustin B., Mahon, Balearic Islands.—Nougat. 656
- 1062 Fábregues, Guillermo, Mahon, Balearic Islands.—Nougat. 656
- 1063 Estapé y Cardona, José, Habana, Cuba.—Guava paste. 656
- 1064 Echarrieta, Santiago, San José de las Lajas, Cuba.—Guava paste. 656
- 1065 Gomez, J., & Co., Habana, Cuba.—Confectionery. 656
- 1066 Usano, Martin, Toledo.—Marchpane. 656
- 1067 Martín y Valverde, Laureano, Toledo.—Marchpane. 656
- 1068 Labrador, Cipriano, Toledo.—Marchpane. 656
- 1069 Perez, Abdon Atienza, Tarazona de la Mancha, Province of Albacete.—Wheat flour. 657
- 1070 Sellés, José, Alicante.—Wheat flour. 657
- 1071 Benito, Isidro, Avila.—Wheat flour. 657
- 1072 Lagarza, Eduardo, Badajoz.—Flour. 657
- 1073 Gil Bros. & Rico, Aranda de Duero, Province of Burgos.—Flour. 657
- 1074 Conde & Bros., Cabia, Province of Burgos.—Flour. 657
- 1075 Toval, Antonio, Burgos.—Grits. 657
- 1076 Arqueaga, Rodrigo, Burgos.—Grits. 657
- 1077 Vega Grande, Count of, Isle of Gran Canaria, Canary Islands.—Maize flour. 657
- 1078 Gordo, Julian, Luzaga, Province of Guadalajara.—Flour and bran. 657
- 1079 Fontoya, Manuel, Jaen.—Flour and bran. 657
- 1080 Martos, Juan Francisco, Jaen.—Flour and bran. 657
- 1081 Prado, Maximo Alonso de, Leon.—Flour. 657
- 1082 Provincial Deputation, Murcia.—Maize flour and rice. 657
- 1083 Pombo, Pedro, Abarca, Province of Palencia.—Wheat flour. 657
- 1084 Mora, Celestino Merino de la, Grijota, Province of Palencia.—Flour. 657
- 1085 Vega, Lucas Ortiz, Grijota, Province of Palencia.—Flour. 657
- 1086 Barrios, Marcelo, Grijota, Province of Palencia.—Flour. 657
- 1087 Ascolitia, Higinio de, Grijota, Province of Palencia.—Flour. 657
- 1088 Barrios, Rios & Co., Palencia.—Flour. 657
- 1089 Durango, Manuel Martinez, Husillos, Province of Palencia.—Flour. 657
- 1090 Dulce y Alvarez, Blas, Herrera de Valdecañas, Province of Palencia.—Flour. 657
- 1091 Sanchez, Basilio Igea, Peñaranda de Bracamonte, Province of Salamanca.—Flour. 657
- 1092 Villa Alcazar, Marquis of, Tejeras, Province of Salamanca.—Flour. 657
- 1093 Carretero, E., Widow of, Segovia.—Flour. 657
- 1094 Carretero, Martin, Segovia.—Flour. 657
- 1095 Riber, Villa & Puerta, Segovia.—Flour. 657
- 1096 Saperas, Francisco, Reus, Province of Tarragona.—Flour and bran. 657
- 1097 Industrial Flour Mill of Reus, Province of Tarragona.—Flour and bran. 657
- 1098 Gatell y Folch, Juan, Altafulla, Province of Tarragona.—Maize flour. 657
- 1099 Estéban, Francisco, Toledo.—Wheat flour. 657
- 1100 Huelbes y Ortis, Emilio, Ocaña, Province of Toledo.—Vetch flour. 657
- 1101 Martinez, Gomez & Co., Sueca, Province of Valencia.—Decorated rice. 657
- 1102 Society "La Edetana," Province of Valencia.—Rice. 657
- 1103 Quemada, Juan de Dios, & Sons, Vitoria, Province of Valladolid.—Wheat flour. 657
- 1104 Hornedo y Velasco, Pedro, Valladolid.—Wheat flour. 657

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- 1105 Pardo, R. & P., Corcos, Province of Valladolid.—Wheat flour. 657
- 1106 La Patilla, Count of, Benavente, Province of Zamora.—Wheat flour. 657
- 1107 Palomar, Nasciso, Zaragoza.—Flour. 657
- 1108 Higuera, Tomás, Zaragoza.—Flour. 657
- 1109 Segura, José, Sevilla.—Grita. 657
- 1110 Ribera, Guarner & Bros., Alicante.—Vermicelli and fine pastes. 658
- 1111 Esteve, Juan M., Alicante.—Starch. 658
- 1112 Ponsseti y Gomila, José, Mahon, Balearic Islands.—Soup paste. 658
- 1113 Batlló Bros., Barcelona.—Starch. 658
- 1114 Draper y Precios, Salvador, San Martín de Provencals, Province of Barcelona.—Starch. 658
- 1115 Provincial Board of Agriculture, Castellon.—Starch. 658
- 1116 Provincial Deputation, Murcia.—Soup pastes. 658
- 1117 Rey, Manuel Pereiro, Orense.—Fecula of potatoes. 658
- 1118 Barrera, Pedro García, Ciudad-Rodrigo, Province of Salamanca.—Starch. 658
- 1119 Carnero & Colsa, Salamanca.—Starch. 658
- 1120 Moro, José, Salamanca.—Starch. 658
- 1121 Mirat & Son, Salamanca.—Starch. 658
- 1122 Jarrin, Bernardo, Salamanca.—Soup pastes. 658
- 1123 Martínez Sainz Bros., Sevilla.—Soup pastes and starch. 658
- 1124 Gil, Gregorio, Valladolid.—Starch. 658
- 1125 Cuevas & García, Valladolid.—Vermicelli. 658
- 1126 Castañeda, Romualdo Ruiz, Torralba de Calatrava, Province of Ciudad-Real.—Arrope (a kind of syrup). 659
- 1127 Rey, Luis Jouva, Granada.—Sugar and molasses. 659
- 1128 Torrent, Francisco, Almuñecar, Province of Granada.—Sugar. 659
- 1129 Huelin, Guillermo & Son, Málaga.—Unrefined sugar. 659
- 1130 Provincial Deputation, Murcia.—Jelly and syrup. 659
- 1131 Roca Bros., Murcia.—Pomegranate syrup. 659
- 1132 Mallet, Ildefonso, Zaragoza.—Oriental nectar. 659
- 1133 Central Commission of the Island of Cuba, Habana.—Sugar. 659
- 1134 Isnaga, Natividad, Habana, Cuba.—Sugar. 659
- 1135 Veguer y Nagüer, Juan, Habana, Cuba.—Sugar. 659
- 1136 Poey, Juan, Habana, Cuba.—Sugar and Guarapo (fermented sugar cane liquor). 659
- 1137 Girart, Nicolas, Regla, Cuba.—Sap of the sugar-cane. 659
- 1138 Capsir, José Damian, Puebla de Rugat, Province of Valencia.—Grape syrup. 659
- 1139 Gasco y Beltran, Joaquin, Zaragoza.—Raspberry syrup. 659
- 1140 García Muñoz, Emilia Samá de, Habana, Cuba.—Sugar. 659
- 1141 Skiret Bros., San Juan de Puerto Rico.—Sugar. 659
- 1142 Balanzategui, Canuto, El Ciego, Province of Alava.—Red wine. 660
- 1143 Riscal de Alegre, Marquis of, El Ciego, Province of Alava.—Red wine. 660
- 1144 Tortosa, Joaquin, Hellin, Province of Albacete.—Brandy. 660
- 1145 Gil, Eloy, Hellin, Province of Albacete.—Wine. 660
- 1146 Lopez, Celestino, Tarazona de la Mancha, Province of Albacete.—Brandy. 660
- 1147 Aroca, José, Tarazona de la Mancha, Province of Albacete.—White wine. 660
- 1148 Lopez, Alonso, Tarazona de la Mancha, Province of Albacete.—Brandy. 660
- 1149 Sanchez, José Acacio, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1150 Pedraja, Bernardo Gomez, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1151 Fernandez, Antonio, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1152 Simarro, Miguel, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1153 Lara, Celestino Picasso, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1154 Tendaro, Gerónimó, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1155 Picasso, Pedro Bautista, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1156 Serrano, María Rosa, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1157 Dénia, Rafael, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
- 1158 Albi y Ginér, Antonio, Jabea, Province of Alicante.—Muscatel vinegar. 660
- 1159 Ferriz y Martínez, Cristóbal, Campo de Mirra, Province of Alicante.—Wine. 660
- 1160 Rojas Aguado, José, Agreá, Province of Alicante.—Wine. 660
- 1161 Gumiel y García, Luis, Aspe, Province of Alicante.—Anise-seed cordial. 660
- 1162 Romany, Vicente, & Sons, Dénia, Province of Alicante.—White wine. 660
- 1163 Albert, Antoliano Perez, Monóvar, Province of Alicante.—Wines and brandies. 660
- 1164 Campos, Eduardo, Alicante.—Wine. 660
- 1165 Alsina, José, Partido de Campello, Province of Alicante.—White and red wine. 660

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- 1166 Alenda, Antonio, & Son, Novelda, Province of Alicante.—Brandy. 660
- 1167 Almodóvar, Antonio Sanchez, Alicante.—Wines. 660
- 1168 Prast, Queremon Alfonso, Monóvar, Province of Alicante.—Brandy. 660
- 1169 Vidal, Joaquin Calpena, Monóvar, Province of Alicante.—Red wine. 660
- 1170 Muñoz, Lorenzo Fernandez, San Juan, Province of Alicante.—Wine. 660
- 1171 Ortuño y Maestre Juan Francisco, Salinas, Province of Alicante.—Wine. 660
- 1172 Verdú y Perez, Joaquin, Monóvar, Province of Alicante.—Wines. 660
- 1173 Leach, Giró & Co., Alicante.—White wines. 660
- 1174 Novelda, Tomás Escolano, Province of Alicante.—Brandy. 660
- 1175 Berenguer, Raimundo, Monóvar, Province of Alicante.—Sweet brandy. 660
- 1176 Cerdá, Enrique, Monóvar, Province of Alicante.—Vinegar. 660
- 1177 Verdú y Rico, Monóvar, Province of Alicante.—Vinegar. 660
- 1178 Perez Verdú Brothers, Monóvar, Province of Alicante.—Vinegar and wines. 660
- 1179 Paya, Ciro Perez, Monóvar, Province of Alicante.—Wines. 660
- 1180 Verdú, Marcial, Monóvar, Province of Alicante.—Red wine. 660
- 1181 Verdú y Cortés, Vedasto, Monóvar, Province of Alicante.—Vinegar. 660
- 1182 Verdú y Perez, Luis, Monóvar, Province of Alicante.—Wines. 660
- 1183 Rico, Antonio Perez, Monóvar, Province of Alicante.—Wines. 660
- 1184 Rico y Albert, Alejandro, Monóvar, Province of Alicante.—Wines. 660
- 1185 Verdú, Remedios Perez, Monóvar, Province of Alicante.—Vinegar and wines. 660
- 1186 Albert, Perez, & Co., Province of Alicante.—Vinegar and wines. 660
- 1187 Gisbert y Marco, Francisco, Ibi, Province of Alicante.—Red wine. 660
- 1188 Boculini, Juan Baeza, Alicante.—Red wine. 660
- 1189 Ferrer, Jaime, Alicante.—Vinegar. 660
- 1190 Faes Bros. & Co., Sax, Province of Alicante.—Anise-seed cordial and spirits of wine. 660
- 1191 Coquillat y Sempere, José, Elche, Province of Alicante.—Muscadel wine. 660
- 1192 Amorós, Juan Esteve, Monforte, Province of Alicante.—Wine. 660
- 1193 Garcia, Luis Gumiel, Aspe, Province of Alicante.—Brandies. 660
- 1194 Agulló, Francisco Fuentes, & Bros., Elche, Province of Alicante.—Wines, vinegar, alcohol, and pomegranate wine. 660
- 1195 Pina, Juan Bautista, Monforte, Province of Alicante.—Mistela (national drink). 660
- 1196 Benito, Juan Pina, Monforte, Province of Alicante.—Wine. 660
- 1197 Scals, José, Jijona, Province of Alicante.—Wine. 660
- 1198 Somoza, Ramon Maria Nava, Moraleja Matcabras, Province of Avila.—White wine. 660
- 1199 Soria, Mariano, Nava del Rey, Province of Avila.—Vinegar. 660
- 1200 Davernat & Co., Velez-Rubio, Province of Almeria.—Fig-brandy. 660
- 1201 Abadia, Nicolas, Bros., Velez-Rubia, Province of Almeria.—Wines. 660
- 1202 Vilches & Jover, Alhama, Province of Almeria.—Wines and brandies. 660
- 1203 Trell y Chacon, Miguel del, Berja, Province of Almeria.—Wines. 660
- 1204 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Wines. 660
- 1205 Romero, Manuel Carbonero, Purchena.—Province of Almeria.—Wine. 660
- 1206 Roca, Bartolomé, Palma, Balearic Islands.—Brandies and wines. 660
- 1207 Viza, Agustin, Mahon, Balearic Islands.—Refined vinegar. 660
- 1208 Prohens, Damian, Fénanitz, Balearic Islands.—Anise-seed cordial. 660
- 1209 Jaime, Miguel, Santa Maria, Balearic Islands.—Anise-seed cordial. 660
- 1210 Bisellach, Guillermo, Benisalen, Balearic Islands.—Wines. 660
- 1211 Munar, Gabriel, Benisalen, Balearic Islands.—Wines. 660
- 1212 Mulet, Antonio, Beñalbufar, Balearic Islands.—Malmsey wine. 660
- 1213 La Cenja, Marquis of, Beñalbufar, Balearic Islands.—Muscadel wine. 660
- 1214 Humbert, Nicasio, Lluçmayor, Balearic Islands.—Wines. 660
- 1215 Ferrant, Manuel, Barcelona.—Vinegar. 660
- 1216 Soler y Stussa, Valentin, Barcelona.—Wines and vinegars. 660
- 1217 Society Burchers, Pedro Miret, San Juan de Vilasar, Province of Barcelona.—Liquors. 660
- 1218 Ballester y de Torres, Laureano, Mediona, Province of Barcelona.—Wines. 660
- 1219 Castells de Mas, Joaquin Pedrosa de, Esparraguera, Province of Barcelona.—Wines. 660
- 1220 Valls, Pedro, & Vilas, Gaspar, Esparraguera, Province of Barcelona.—Wines and liquors. 660
- 1221 Llampallas, Antonio, Masnou, Province of Barcelona.—Wines. 660
- 1222 Ventura y Sempere, Amado, Masnou, Province of Barcelona.—Liquors and anise-seed cordial. 660
- 1223 Pascual, Miguel, Masnou, Province of Barcelona.—Wines. 660
- 1224 Golar y Sirasol, José, Villanueva y Geltrú, Province of Barcelona.—Red wine. 660
- 1225 Cusi y Ferret, Federico, Villanueva y Geltrú, Province of Barcelona.—Hygienic wine. 660
- 1226 Juandó y Rafecas, Juan, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
- 1227 Marqués, Jerónimo, Villanueva y Geltrú, Province of Barcelona.—Wines. 660



## Animal and Vegetable Products.

- 1228 Alegret, Francisco, Villanueva y Geltrú, Province of Barcelona.—Mistela (national drink). 660
- 1229 Solà, Félix, Villanueva y Geltrú, Province of Barcelona.—Red wine. 660
- 1230 Baró y Gibert, José, Villanueva y Geltrú, Province of Barcelona.—Virgin wine. 660
- 1231 Reig y Serra, Juan, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
- 1232 Creux, Teodoro, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
- 1233 Dodero y Ponte, José Oriol, Poma de Badalona, Province of Barcelona.—Wines. 660
- 1234 Valenti, Joaquín, Cabrera de Mataró, Province of Barcelona.—Wine. 660
- 1235 Sivilla y Martorell, Narciso, Villafranca de Panadés, Province of Barcelona.—Anise-seed wine. 660
- 1236 Girona, Silvestre, Villafranca de Panadés, Province of Barcelona.—Anise-seed cordial. 660
- 1237 Olivella, Cristóbal, Villafranca de Panadés, Province of Barcelona.—Imitation wines. 660
- 1238 Mullol, Buenaventura Rius, Villafranca de Panadés, Province of Barcelona.—Wines. 660
- 1239 Escofet Nello, Margarita, Widow of, Province of Barcelona.—Macon wine and imitations. 660
- 1240 Font, Salvador, Mataró, Province of Barcelona.—Liquors. 660
- 1241 Palau, Joaquín de, Mataró, Province of Barcelona.—Wines. 660
- 1242 Monte, Pedro Prat del, Barcelona.—Florentine vermouth. 660
- 1243 Fontanals, José Teresa, Barcelona.—Beer. 660
- 1244 Sallés, Salvador, Barcelona.—Wine. 660
- 1245 Plá y Vila, Pedro, Barcelona.—Brandy. 660
- 1246 Oliver Bros., Barcelona.—Wines. 660
- 1247 Codina y Riu, Ramon, San Boy de Llobregat, Province of Barcelona.—Wine. 660
- 1248 Durán, Eduardo, San Vicente, Province of Barcelona.—Wine. 660
- 1249 Girona, Manuel, Villa de Cabals, Province of Barcelona.—Wine. 660
- 1250 Santacana, José, La Granada, Province of Barcelona.—Mistela wine. 660
- 1251 Deu, José, & Co., Masqueja y Martorell, Province of Barcelona.—Wine. 660
- 1252 Fornell y Batllaura, Juan, Abella, Province of Barcelona.—Wine. 660
- 1253 Oliver y Coll, Francisco, Papiol, Province of Barcelona.—Wine, liquors, and vinegar. 660
- 1254 Beltran y Rosell, Manuel, Igualada, Province of Barcelona.—Wine. 660
- 1255 Robira y Grau, Jose, San Martin de Sarroca, Province of Barcelona.—Wines and imitations. 660
- 1256 Barrera, Gabriel, Tayá, Province of Barcelona.—Wine. 660
- 1257 Bosch y Grau, José, Badalona, Province of Barcelona.—Brandy. 660
- 1258 Améll y Carbonell, José, Sitges, Province of Barcelona.—Wine. 660
- 1259 Puig, José Buenaventura, Sitges, Province of Barcelona.—Muscatel and Malmsey wine. 660
- 1260 Ventalló y Llobateras, Domingo, Tarrasa, Province of Barcelona.—Wines. 660
- 1261 Castellet, Buenaventura, Tarrasa, Province of Barcelona.—Wines. 660
- 1262 Gall, Antonio, Tarrasa, Province of Barcelona.—Wines. 660
- 1263 Pons, Antonio Castells de, Esparraguera, Province of Barcelona.—Wines. 660
- 1264 Castell de Mas, Joaquín Pedrosa de, Esparraguera, Province of Barcelona.—Wine. 660
- 1265 Camprubí, Juan, Barcelona.—Liquor and anise-seed cordial. 660
- 1266 Puig & Llagosteras Bros., Barcelona.—Vinegar. 660
- 1267 Llobet, Antonio Maria, Barcelona.—Wine. 660
- 1268 Patiño, José Maria, Cabeza de Vaca, Province of Badajoz.—Wine. 660
- 1269 Carrasco, Alfonso, Guareña, Province of Badajoz.—Wine. 660
- 1270 Sifredi, Juan Bautista, Almen-dralejo, Province of Badajoz.—Brandy and wine. 660
- 1271 Paredes, Carlos, Guareña, Province of Badajoz.—Muscatel wine. 660
- 1272 Cortés, José Inocente, Guareña, Province of Badajoz.—Pedro Jimenez wine. 660
- 1273 Lopez, Aureliano, Badajoz.—Red and white wine. 660
- 1274 Benito y Reoyo, Genaro, Burgos.—Brandy. 660
- 1275 Regules, Dionisio, Miranda de Ebro, Province of Burgos.—Wine. 660
- 1276 San Roman, Agustín Lopez de, Valle de Mena, Province of Burgos.—Red and white wine. 660
- 1277 Goya y Lopez, Marcelino, Burgos.—Vinegar. 660
- 1278 Franco, Ramon Santivañez, Casar de Palomero, Province of Cáceres.—Wine. 660
- 1279 Olivares, Jeronimo Sande, Garrovillas, Province of Cáceres.—Wine. 660
- 1280 Bustamante, Bernardino, Villamiel, Province of Cáceres.—Wine. 660
- 1281 Bacas y Estévez, Ignacio, Cilleros, Province of Cáceres.—Wine. 660
- 1282 Herran & Co., Jerez de la Frontera, Province of Cadiz.—Wine. 660
- 1283 Troya, Ildefonso, Prado del Rey, Province of Cadiz.—Wine. 660
- 1284 Hontoria y Tezanos, Joaquín, Sanlúcar, Province of Cadiz.—Wine. 660
- 1285 Hidalgo y Verjano, Eduardo, Sanlúcar, Province of Cadiz.—Wines and vinegar. 660
- 1286 Blanco, Antonio, Prado del Rey, Province of Cadiz.—Wine. 660
- 1287 Argüeso y Argüeso, Leon de, Sanlúcar, Province of Cadiz.—Wine. 660

## Animal and Vegetable Products.

- 1286 Martinez, Antonio, Sanlúcar, Province of Cadiz.—Wine. 660
- 1289 Linares y Obeso, Diego, Sanlúcar, Province of Cadiz.—Wine. 660
- 1290 Urmeneta, Fermin de, Chiclana, Province of Cadiz.—Brandy. 660
- 1291 Sanchez, Antonio, Chiclana, Province of Cadiz.—Wine. 660
- 1292 Rivas, Francisco Martinez de, Chiclana, Province of Cadiz.—Wine. 660
- 1293 Hugues, Guillermo H., Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1294 Alvarez, Serafin, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1295 Segundo, Federico, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1296 Rudolph, Federico, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1297 Carli, Ramon, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1298 Pico, José Maria, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1299 Pró, José Maria, Puerto de Santa Maria, Province of Cadiz.—Wine. 660
- 1300 Parilla, José de Puentes, Jerez de la Frontera, Province of Cadiz.—Wine. 660
- 1301 Gonzalez, Blass & Co., Jerez de la Frontera, Province of Cadiz.—Wines. 660
- 1302 Santarelli Bros., Jerez de la Frontera, Province of Cadiz.—Wines. 660
- 1303 Lopez, Juan Antonio, Widow of, Jerez de la Frontera, Province of Cadiz.—Wines. 660
- 1304 Lebrun & Co., La Orotava, Canary Islands.—Wines. 660
- 1305 Davison, Guillermo, & Co., La Orotava, Canary Islands.—Wines. 660
- 1306 Carpenter & Co., La Orotava, Canary Islands.—Wines. 660
- 1307 Bruce, Hamilton, & Co., La Orotava, Canary Islands.—Wines. 660
- 1308 Monteverde, Antonio, La Orotava, Canary Islands.—Wine. 660
- 1309 Tolosa, Fernando, La Orotava, Canary Islands.—Wine. 660
- 1310 Lopez, Juan José Barriuso, La Victoria, Canary Islands.—Wines and brandies. 660
- 1311 Diego, Wood & Co., Las Palmas, Canary Islands.—Wines. 660
- 1312 Castello y Olivares, José del, Las Palmas, Canary Islands.—Wines. 660
- 1313 Vega Grande, Count of, Las Palmas, Canary Islands.—Wine. 660
- 1314 Avilés, Nicolás, Las Palmas, Canary Islands.—Wine. 660
- 1315 Quevedo y Perez, José C., Isle of Gran Canaria, Canary Islands.—Wines. 660
- 1316 Gourié, Alfonso, Las Palmas, Canary Islands.—Wines. 660
- 1317 Quintana, Juan de, Las Palmas, Canary Islands.—Wine. 660
- 1318 Massieu, Domingo, Balsequillo, Canary Islands.—Wine. 660
- 1319 Peraza, Alejandro, Granadilla, Canary Islands.—Wine. 660
- 1320 Llovera y Llovet, Vicente, Masia de Cucalon, Province of Castellon.—Wine. 660
- 1321 Villosres, Marquis of, Torreblanco, Province of Castellon.—Wines. 660
- 1322 Vilanova y Piera, Pascual, Alcalá de Chisvert, Province of Castellon.—Wines. 660
- 1323 Provincial Board of Agriculture, Borriol, Province of Castellon.—Vinegar and wines. 660
- 1324 Ripolles y Perez, Manuel, Castellon.—Brandies. 660
- 1325 Gascó, F. B., Castellon.—Brandy. 660
- 1326 Climent, Vicente, Castellon.—Wines. 660
- 1327 Cloramunt, Hilarion, Vinaroz, Province of Castellon.—Wines. 660
- 1328 Masorra, Mateo, & Son, Valdepeñas, Province of Ciudad-Real.—Wine. 660
- 1329 Mazarron, Miguel, Valdepeñas, Province of Ciudad-Real.—Wines. 660
- 1330 Mudela, Marquis of, Valdepeñas, Province of Ciudad-Real.—Wines. 660
- 1331 Fraile, Maria de la Asuncion Valdepeñas, Province of Ciudad-Real.—Wines. 660
- 1332 Peinado y Lasa, Tiburcio, Tomesollo, Province of Ciudad-Real.—Brandy. 660
- 1333 Villena y Parra, Sinforiano, Tomesollo, Province of Ciudad-Real.—Brandy and spirits of wine. 660
- 1334 Ramirez, Primo, Tomesollo, Province of Ciudad-Real.—Brandy and spirits of wine. 660
- 1335 Gijon, Trinidad, Torralba, Province of Ciudad-Real.—Wine. 660
- 1336 Delgado y Palacios, Juan, Ciudad-Real.—Alcohol and anise-seed cordial. 660
- 1337 Ruiz, Romualdo, Torralba, Province of Ciudad-Real.—Wines. 660
- 1338 Medraño, José, Ciudad-Real.—Wine. 660
- 1339 Soria, Marciano de, Valdepeñas, Province of Ciudad-Real.—Wine. 660
- 1340 Avansay, Hipólito, & Son, Valdepeñas, Province of Ciudad-Real.—Wine. 660
- 1341 Blanco y Alcalde, Rafael, Cabra, Province of Córdoba.—Wine. 660
- 1342 Carretero, Pedro, Córdoba.—Wine. 660
- 1343 Molina, Isidro, Rute, Province of Córdoba.—Wine. 660
- 1344 Perez, Diego Ecija, Rute, Province of Córdoba.—Brandy. 660
- 1345 Ruiz, Francisco Moreno, Doña Mencía, Province of Córdoba.—Brandy. 660
- 1346 Calvo, José Maria, Cabra, Province of Córdoba.—Brandies. 660
- 1347 Rubio, José Calvo, Aguilar, Province of Córdoba.—Montilla wine. 660
- 1348 Vargas, Sebastian, Villaviciosa, Province of Córdoba.—Wines. 660
- 1349 Infante, José Escobar, Villaviciosa, Province of Córdoba.—Wine. 660
- 1350 Arribas, Antonio Escobar, Villaviciosa, Province of Córdoba.—Wine. 660

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- 1351 Módenes, Juan, R., Baena, Province of Córdoba.—Wines. 660
- 1352 Negea, Francisco de Paula, Baena, Province of Córdoba.—Wine. 660
- 1353 Fernandez, Francisco, Baena, Province of Córdoba.—Wine. 660
- 1354 Salas, Francisco Solano, Montilla, Province of Córdoba.—Montilla wine. 660
- 1355 Jurado, José, Montilla, Province of Córdoba.—Montilla wine. 660
- 1356 Raigon, Antonio, Montilla, Province of Córdoba.—Montilla wine. 660
- 1357 Navarro, Antonio José, Montilla, Province of Córdoba.—Montilla wine. 660
- 1358 Alvear, Carlos, Montilla, Province of Córdoba.—Montilla wine. 660
- 1359 Alvear y Ward, Francisco, Montilla, Province of Córdoba.—Montilla wine. 660
- 1360 Polo, Bartolomé, Montilla, Province of Córdoba.—Montilla wine. 660
- 1361 Canela, José, Lucena, Province of Córdoba.—Montilla wine. 660
- 1361a Canela, Antonio, Lucena, Province of Córdoba.—Montilla wine. 660
- 1362 Sotomayor, Eduardo Alvarez, Lucena, Province of Córdoba.—Wine. 660
- 1363 Valle, José Muñoz, Lucena, Province of Córdoba.—Wine. 660
- 1364 Valensuela, José Valle, Lucena, Province of Córdoba.—Wine. 660
- 1365 Algar, José Ruiz de, Lucena, Province of Córdoba.—Wine. 660
- 1366 Gallardo, José, Montilla, Province of Córdoba.—Wines. 660
- 1367 Villalba y Sotomayor, Manuel, Montilla, Province of Córdoba.—Montilla wine. 660
- 1368 La Corte, Marquis of, Cabra, Province of Córdoba.—Wines. 660
- 1369 López, Pedro, Córdoba.—Wine. 660
- 1370 Neyralores, Gerardo, Fao, Province of La Coruña.—White wine. 660
- 1371 Bustindui, José Antonio, San Clemente, Province of Cuenca.—Wines. 660
- 1372 Moreno, Domingo, Tarazona, Province of Cuenca.—Wine. 660
- 1373 Retamoso, Count of, Tarazona, Province of Cuenca.—Wine and brandy. 660
- 1374 Torre y Salto, Antonio de la, Tarazona, Province of Cuenca.—Red wine. 660
- 1375 Valera, Julian Martinez, Chilaron, Province of Cuenca.—Red wine. 660
- 1376 Carné, José, Tarazona, Province of Cuenca.—Red wine. 660
- 1377 Escobar y del Campo, Francisco, Rubielos Bajos, Province of Cuenca.—Red wine. 660
- 1378 Vilaret, Agustín, Bienes, Province of Gerona.—Malmsey wine. 660
- 1379 Descals, Francisco Puig, Rozar, Province of Gerona.—Wine. 660
- 1380 Vega y Tejada, Ezequiel de la, Guadalajara.—Wines. 660
- 1381 Martinez, Gregorio Garcia, Guadalajara.—Wine. 660
- 1382 Reyes, Juan A., Guadalajara.—Wine. 660
- 1383 Muñoz y Mendez, Eugenio, Huanes, Province of Guadalajara.—Wine. 660
- 1384 Martí, Diego Garcia, Guadalajara.—Wines. 660
- 1385 Iñiguez, José, Gibráleon, Province of Huelva.—Wine and brandy. 660
- 1386 Cepeda, Ignacio de, Almonte, Province of Huelva.—Wine and vinegar. 660
- 1387 Roldan, Manuel Moreno, Almonte, Province of Huelva.—Wine. 660
- 1388 Acebedo, Francisco, Almonte, Province of Huelva.—Manzanilla wine. 660
- 1389 Lagarú, Francisco, Almonte, Province of Huelva.—White wine. 660
- 1390 Gonzalez, Nicolás Gomez, Huelva.—Wines and brandy. 660
- 1391 Cueva, Fernando de la, Huelva.—Wines and brandy. 660
- 1392 Díaz y Gomez, Eduardo, Huelva.—Wines. 660
- 1393 Mesa, Francisco Carrion, Huelva.—Brandy and anise-seed cordial. 660
- 1394 Martín y Colombo, Huelva.—Alcohol and brandy. 660
- 1395 Lopez, Luis Maria, Huelva.—White wine. 660
- 1396 Quintero, Juan Garcia, Huelva.—Vinegar. 660
- 1397 Torre y Figueroa, Antonio de la, Huelva.—Red wine. 660
- 1398 Penillos, Garcia & Co., Bollullos, Province of Huelva.—Wines. 660
- 1399 Society "Palma y Quesada," Aguilar, Province of Córdoba.—Wines. 660
- 1400 Garcia y Ruiz, Pedro, Bollullos, Province of Huelva.—Wines. 660
- 1401 Nebie, José Maria, Bollullos, Province of Huelva.—Wines. 660
- 1402 Garcia, Pedro, Bollullos, Province of Huelva.—Wines. 660
- 1403 Dominguez, Francisco, Bollullos, Province of Huelva.—Brandies. 660
- 1404 Molina, Federico, Rociana, Province of Huelva.—Wine, vinegar, and arropo (national drink). 660
- 1405 Carrasco, José Maria, Donares, Province of Huelva.—Wine and vinegar. 660
- 1406 Pinzon, Luis H., Moguer, Province of Huelva.—Wine and brandy. 660
- 1407 Gimenez de Tejada Bros., Moguer, Province of Huelva.—Wines and vinegar. 660
- 1408 Gimenez de Tejada, Servando, Moguer, Province of Huelva.—Wines and vinegar. 660
- 1409 Flores, Antonio, Moguer, Province of Huelva.—Wines and brandy. 660
- 1410 Ramirez, Francisco Perez, Moguer, Province of Huelva.—Wines. 660
- 1411 Carmona, José Gomez, Moguer, Province of Huelva.—Wines and alcohol. 660
- 1412 Iñiguez, Rafael, Moguer, Province of Huelva.—Wines. 660

## Animal and Vegetable Products.

- 1413 Thorices, Basilio, Moguer, Province of Huelva.—Wines and vinegar. 660
- 1414 Thorices, Francisco R., Moguer, Province of Huelva.—Wines and vinegar. 660
- 1415 Gonzalez, Manuel, Moguer, Province of Huelva.—Wine and vinegar. 660
- 1416 Soldan, Antonio, La Palma, Province of Huelva.—Wines and brandy. 660
- 1417 Martinez, Eduardo, La Palma, Province of Huelva.—Wines. 660
- 1418 Cepeda, Manuel, La Palma, Province of Huelva.—Wines. 660
- 1419 Cueva, Manuel de la, La Palma, Province of Huelva.—Anise-seed cordial and brandy. 660
- 1420 Pinzon, Rafael Iñiguez, Manzanilla, Province of Huelva.—Wines. 660
- 1421 Marquez, Rufino José, Manzanilla, Province of Huelva.—Wines. 660
- 1422 Estrado, Diego P., Manzanilla, Province of Huelva.—Wine. 660
- 1423 Rivera, Antonio Marquez, Manzanilla, Province of Huelva.—Wines. 660
- 1424 Mercado, Manuel, Manzanilla, Province of Huelva.—Wines. 660
- 1425 Rodriguez, José Trigueros, Province of Huelva.—Wines. 660
- 1426 Cecero y Barreda, Emilio, Trigueros, Province of Huelva.—Wine. 660
- 1427 Montiel, Eliezer, Trigueros, Province of Huelva.—Wines. 660
- 1428 Zambrano, José Antonio, Villalba del Alcor, Province of Huelva.—Wines and vinegar. 660
- 1429 Espina, José Maria, Villalba del Alcor, Province of Huelva.—Vinegar. 660
- 1430 Oliver, D. L., Huesca.—Wines. 660
- 1431 Arnal, Dionisio, Castelflorite, Province of Huesca.—Claret. 660
- 1432 Beotégui, Fernando, Sena, Province of Huesca.—Claret. 660
- 1433 Salinas, Francisco, Castelflorite, Province of Huesca.—Wine. 660
- 1434 Laguna, Alejandro, Grañen, Province of Huesca.—Wines and claret. 660
- 1435 Budios, Leon, Sariñena, Province of Huesca.—Wine. 660
- 1436 Sampietra, Antonio, Sariñena, Province of Huesca.—Wine. 660
- 1437 Bastarás, Antonio, Lanaja, Province of Huesca.—Wine. 660
- 1438 Lasheras, Manuel, Alcubierre, Province of Huesca.—Claret. 660
- 1439 Lacruz, Francisco, Alcubierre, Province of Huesca.—Wine and claret. 660
- 1440 Adrid, Antonio, Alcubierre, Province of Huesca.—Claret. 660
- 1441 Calvo, Antonio, Poleñino, Province of Huesca.—Claret. 660
- 1442 Lasiera, Joaquin, Pallazuela, Province of Huesca.—Claret. 660
- 1443 Lasiera, Francisco, Pallazuela, Province of Huesca.—Claret. 660
- 1444 Lacruz, Antonio, Alcubierre, Province of Huesca.—Red wine. 660
- 1445 Ruata, Juan, Alcubierre, Province of Huesca.—Claret. 660
- 1446 Casamayor, Manuel, Alcubierre, Province of Huesca.—Red wine. 660
- 1447 Vasquez, Francisco, Cazorla, Province of Jaen.—Red wine. 660
- 1448 Marin, José, Cazorla, Province of Jaen.—Red wine. 660
- 1449 Almagro, Sebastian Cañada, Jaen.—San Vicente wine, brandy, and rafia. 660
- 1450 Las Almenas, Count of, Espeluy, Province of Jaen.—White wine. 660
- 1451 Corporation of Arganza, Province of Leon.—Wines. 660
- 1452 Fernandez, José, Sahagan, Province of Leon.—Wines. 660
- 1453 Martinez, Lucas Prado, Galleguillos, Province of Leon.—Wine. 660
- 1454 Isla, Pedro, Benasobe, Province of Leon.—Wine. 660
- 1455 Corporation of Valdefresno, Province of Leon.—Red wine. 660
- 1456 Corporation of Armunia, Province of Leon.—Red wine. 660
- 1457 Corporation of Valverde del Camino, Province of Leon.—Red wine. 660
- 1458 Corporation of Villaturiel, Province of Leon.—Red wine. 660
- 1459 Corporation of Valdemimbre, Province of Leon.—Red wine. 660
- 1460 Corporation of Pajares de los Oteros, Province of Leon.—Red wine. 660
- 1461 Corporation of Ponserrada, Province of Leon.—White wine. 660
- 1462 Corporation of Congosto, Province of Leon.—White wine. 660
- 1463 Bustamente, Angel Maria, Astorga, Province of Leon.—Anise-seed cordial. 660
- 1464 Bon, Ramon, Vinaixa, Province of Lérida.—Wine. 660
- 1465 Alós, Francisco, Balaguer, Province of Lérida.—Wine. 660
- 1466 Codina, Ramon, Belloch, Province of Lérida.—Wine. 660
- 1467 Reixados, Antonio, Lérida.—Wine. 660
- 1468 Corporation of Vinaixa, Lérida.—Wine. 660
- 1469 Rubes, Miguel, Barbens, Province of Lérida. 660
- 1470 Lamolla Bros., Lérida.—Anise-seed cordial. 660
- 1471 Ochoa & Bro., Cervera del Rio Alhama, Province of Logroño.—Claret. 660
- 1472 Poves y Quintano, Galo de, Allauri, Province of Logroño.—Red wine. 660
- 1473 Caballero, Andrés, Cenicero, Province of Logroño.—Wine. 660
- 1474 Pascual y Caballero, Pedro, Cenicero, Province of Logroño.—Wine. 660
- 1475 Artacho, Juan Bautista, Cenicero, Province of Logroño.—Wine. 660
- 1476 Bobadilla, Natalio, Fernandez, Cenicero, Province of Logroño.—Wine. 660
- 1477 Bujanda, Pablo, Cenicero, Province of Logroño.—Wine. 660
- 1478 Sotes, Angel, Cenicero, Province of Logroño.—Wine. 660
- 1479 Nalda, Pedro Garcia, Cenicero, Province of Logroño.—Wine. 660

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- 1480 Olavarrieta, Manuel Saenz, Cenicer, Province of Logroño.—Wine. 660
- 1481 Bazan, V. Celestino, Cenicer, Province of Logroño.—Wine. 660
- 1482 Mata, Trinidad de la, Alfaro, Province of Logroño.—Anise-seed cordial, liquors, and gin. 660
- 1483 Estéfani, Joaquin Gonzalez, Cuzcurrita, Province of Logroño.—Champagne. 660
- 1484 Cirat y Villafranzuesa, Count of, Haro, Province of Logroño.—Medoc. 660
- 1485 Ozalla, Tomás, & Barons, Felix, Treviana, Province of Logroño.—Claret. 660
- 1486 Zubia, Ildefonso, Logroño.—Sherry. 660
- 1487 Andrade, Andrés, Velacha, Province of Lugo.—Red wine. 660
- 1488 Varela, Manuel Dias, Monforte, Province of Lugo.—Wine. 660
- 1489 Guitian, José, Amandi, Province of Lugo.—Wine. 660
- 1490 Pascual, Widow & Sons of, Madrid.—Champagne and liquors. 660
- 1491 Garcia y Garcia, Manuel, Arganda del Rey, Madrid.—Wine and brandy. 660
- 1492 Cortés, Balbino, Madrid.—Wines. 660
- 1493 San Roman, Agustin Lopez de, Navalcarnero, Province of Madrid.—Red wine and brandy. 660
- 1494 Calatrava, Francisco Garcia, Alcobendas, Province of Madrid.—Muscadel wine and vinegar. 660
- 1495 Navas, Manuel Garcia, Málaga.—Brandy. 660
- 1496 Piao y Gomez, Julio del, Málaga.—Brandy. 660
- 1497 Bueno, Joaquin, & Co., Málaga.—Brandy, wine and liquors. 660
- 1498 Romero, Ramon Garcia, Málaga.—Wine. 660
- 1499 Morales, Pedro, & Co., Ojen, Province of Málaga.—Brandy. 660
- 1500 Muñoz, Atenodoro, Chaperá, Province of Málaga.—Wines. 660
- 1501 Saenz, I., Ronda, Province of Málaga.—Wines. 660
- 1502 Menchero, Eduardo, Cartagena, Province of Murcia.—Orange wine. 660
- 1503 Ferro, Bartolomé, Cartagena, Province of Murcia.—Wine. 660
- 1504 Gil, Antonio Marsilla, Bullas.—Province of Murcia.—Anise-seed milk and brandy. 660
- 1505 Roca Bros., Murcia.—Wines. 660
- 1506 Spottorno, Bartolomé, Cartagena, Province of Murcia.—Wine. 660
- 1507 Castilla, Camilo, Corella, Province of Navarra.—Wines. 660
- 1508 Gimenez, Babil, Tafalla, Province of Navarra.—Wine and brandy. 660
- 1509 Orduña, Calisto, Cascante, Province of Navarra.—Wines. 660
- 1510 Leizaur y Rodriguez, Gabino, Peralta, Province of Navarra.—Wine. 660
- 1511 Anta y Tames, Federico, Orense.—Wines. 660
- 1512 Bobo, Feliciano Perez, Orense.—Wines. 660
- 1513 Amor, Bernardo, Orense.—Wines. 660
- 1514 Romero, Javier, Orense.—Vinegar and brandy. 660
- 1515 Vasquez, José, Orense.—Wine, vinegar, and brandy. 660
- 1516 Leis, Widow of the Marquis of, Orense.—Wines. 660
- 1517 Montenegro, Antonio, Orense.—Wine. 660
- 1518 Mayo, Ignacio Anta, Orense.—Wine and brandy. 660
- 1519 Diaz, Laureano Balbis, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1520 Muñoz, Federico Rodriguez, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1521 Rapela, Laureano Dias, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1522 Gogueira y Diaz, Manuel, San Ciprian de Viñas, Province of Orense.—Wines. 660
- 1523 Diaz, Camila, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1524 Fernandez y Conde, Pedro, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1525 Novoa, Manuel Ramiro, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1526 Rapela, Manuel, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1527 Mosquera, Antonio, Coles, Province of Orense.—Wine. 660
- 1528 Mendez, Urbano Moreno, Verin, Province of Orense.—Wine. 660
- 1529 Garcia, Jacobo André, Verin, Province of Orense.—Wine. 660
- 1530 Moreno, Ramon Sanchez, Verin, Province of Orense.—Wine. 660
- 1531 Velasco, Manuel de, Verin, Province of Orense.—Wine. 660
- 1532 Salgado, Pedro Antonio, Barco de Valdeorras, Province of Orense.—Wine. 660
- 1533 Salgado, Carlos, Barco de Valdeorras, Province of Orense.—Wine. 660
- 1534 Salgado, Joaquin Maria, Widow of, Barco de Valdeorras, Province of Orense.—Wine. 660
- 1535 Alba, Telesforo, Barco, de Valdeorras, Province of Orense.—Wine. 660
- 1536 Rivera, Ramon, Sejalbo, Province of Orense.—Wine. 660
- 1537 Gonzalez, Antonio, Sejalbo, Province of Orense.—Wine. 660
- 1538 Rlobóo, José Fernandez, Sejalbo, Province of Orense.—Wine. 660
- 1539 Bastos, Manuel Fernandez, Rivadavia, Province of Orense.—Wine. 660
- 1540 Estévez, José Vila, Rua de Valdeorras, Province of Orense.—Wine. 660
- 1541 Mouré, Manuel, Rua de Valdeorras, Province of Orense.—Wines. 660
- 1542 Losada, Maria Josefa, Rua de Valdeorras, Province of Orense.—Wine. 660

## Animal and Vegetable Products.

- 1543 Rey, Manuel Pereyro, Canedo, Province of Orense.—Wine. 660
- 1544 Labarta, Miguel, Canedo, Province of Orense.—Wines and vinegar. 660
- 1545 Vila, Francisco, Viana del Bollo, Province of Orense.—Wine. 660
- 1546 Bahamonde, Antonio Varela G., Castelo de Miño, Province of Orense.—Wines. 660
- 1547 Gonzalez, Francisco, Petin, Province of Orense.—Wines. 660
- 1548 Diz, Manuel Fernandez, San Ciprian de Viñas, Province of Orense.—Wine. 660
- 1549 Board of Agriculture, Oviedo.—Cider. 660
- 1550 Zarracina, Tomás, Gijon, Province of Oviedo.—Cider. 660
- 1551 Dominguez, Miguel, Palencia.—Wine. 660
- 1552 Herrero, Pedro Romero, Palencia.—Wine. 660
- 1553 Cachurro, Modesto, & Bro., Duénas, Province of Palencia.—Wines. 660
- 1554 Gutierrez, Juan Francisco, Palencia.—Wine. 660
- 1555 Balbas, José, Torquemada, Province of Palencia.—Wine. 660
- 1556 Palomino, Toribio, Torquemada, Province of Palencia.—Wine. 660
- 1557 Mora, José Manuel, Melogar de Yuso, Province of Palencia.—Wines. 660
- 1558 Monedero, Joaquin, Cevico de la Torre, Province of Palencia.—Wine. 660
- 1559 Martin, Francisco Garcia, Duénas, Province of Palencia.—Wines. 660
- 1560 Suteo & Veiga, Redondela, Province of Pontevedra.—Wines. 660
- 1561 Almanza, Eulogio Troncoso de, Puenteareas, Province of Pontevedra.—Wines. 660
- 1562 Blanco, Joaquin A. Piñeiro, Mourente, Province of Pontevedra.—Wines and vinegar. 660
- 1563 Onís, Federico, Cantalapiedra, Province of Salamanca.—Wines. 660
- 1564 Sierra, Viesca de la, Marquis of, Fregeneda, Province of Salamanca.—Port wine. 660
- 1565 Hortal, Ignacio, Fregeneda, Province of Salamanca.—Sweet wines. 660
- 1566 Corbalan, Juan, Saucelle, Province of Salamanca.—Wine. 660
- 1567 Martin, Lorenzo Calvo, Mogarras, Province of Salamanca.—Wine. 660
- 1568 Hernandez, Ramon, Salamanca.—Rum and liquors. 660
- 1569 Gutierrez, Vicente, Reinosa, Province of Santander.—Gin. 660
- 1570 Cortines, Celis, Santander.—Liquors. 660
- 1571 Rasilla, José, Los Corrales, Province of Santander.—Liquors and wines. 660
- 1572 Ibarra, J. M., & Sons, Sevilla.—Wines. 660
- 1573 Penillos, Garcia & Co., Sevilla.—Wines. 660
- 1574 Valencia, José, Sevilla.—Wines. 660
- 1575 Olmedo, Juan, Sevilla.—Wine, liquor, and vinegar. 660
- 1576 Bordallo, Rodrigo, Sevilla.—Wine, liquors, and brandy. 660
- 1577 Huerta, Constantino de la, Sevilla.—Wine and vinegar. 660
- 1578 La Motilla, Marquis of, Sevilla.—White wine. 660
- 1579 Galindo, Widow of, Valencia, Province of Sevilla.—Wine and liquors. 660
- 1580 Silva & Arcoas, Espartinas, Province of Sevilla.—Wines. 660
- 1581 Mayorga, Ramon Diaz, Moron, Province of Sevilla.—White wine and vinegar. 660
- 1582 Alvarez, José, Constantina, Province of Sevilla.—Wine and brandy. 660
- 1583 Rosa y Silva, José de la, Villamanrique, Province of Sevilla.—Wine and brandy. 660
- 1584 Romero, Enrique, Constantina, Province of Sevilla.—Brandy. 660
- 1585 Olmo, Sebastian del, Constantina, Province of Sevilla.—Brandy. 660
- 1586 Salcedo, José J. Gonzalez de, Constantina, Province of Sevilla.—Wine. 660
- 1587 Torres, Juan Lainez, Arahal, Province of Sevilla.—Wine. 660
- 1588 Capdevila, José Diaz, Arahal, Province of Sevilla.—Wine. 660
- 1589 Reina, Manuel Arias, Arahal, Province of Sevilla.—Wine. 660
- 1590 Zepa, José, Villanueva del Ariscal, Province of Sevilla.—Wine. 660
- 1591 Amores, Manuel, Villanueva del Ariscal, Province of Sevilla.—Wine and vinegar. 660
- 1592 Lucena, Nicolás, Osuna, Province of Sevilla.—Wine. 660
- 1593 Celis, José G. de, Salteras, Province of Sevilla.—Wine. 660
- 1594 Arenas, Antonio Rivas, Cantillana, Province of Sevilla.—Brandy. 660
- 1595 Valle y Villar, Luis del, Lebrija, Province of Sevilla.—Wine. 660
- 1596 Rabio, Juan Miguel, Dos-Hermanos, Province of Sevilla.—Wine. 660
- 1597 Olivencia Bros., Olivares, Province of Sevilla.—Wine. 660
- 1598 Liendo, Manuel, Gines, Province of Sevilla.—Wine. 660
- 1599 Cota, Antonio Garcia, Olivares, Province of Sevilla.—Vinegar. 660
- 1600 Siscar, Ramon, La Canonja, Province of Tarragona.—Wine. 660
- 1601 Robers, Sebastian Garcia de, Scala Dei, Province of Tarragona.—Wine. 660
- 1602 Peira y Mach, Agustin, Scala Dei, Province of Tarragona.—Wine. 660
- 1603 Gotell y Folch, Juan, Altafulla, Province of Tarragona.—Wine and vinegar. 660
- 1604 Grás, Pedro, Reus, Province of Tarragona.—Wine. 660
- 1605 Boulet, José, Reus, Province of Tarragona.—Wine and garracha (narrow drink). 660
- 1606 Soberano & Co., Reus, Province of Tarragona.—Wine. 660

## Animal and Vegetable Products.

- 1607 Fumafia Bros., Reus, Province of Tarragona.—Wine. 660
- 1608 Abelló & Son, Reus, Province of Tarragona.—Wine. 660
- 1609 Gil, Francisco, Reus, Province of Tarragona.—Wine. 660
- 1610 Martí y Badia, Ramon, Reus, Province of Tarragona.—Mistela (national drink) and spirits of wine. 660
- 1611 Pla, Francisco, Reus, Province of Tarragona.—Spirits of wine and anise-seed cordial. 660
- 1612 Pujol y Salvat, Francisco, Reus, Province of Tarragona.—Garnacha (national drink) and muscatel wine. 660
- 1613 Esteve, A., Widow & Son of, Reus, Province of Tarragona.—Vinegar and alcohol. 660
- 1614 Sirvent y Oliver, Pedro, Reus, Province of Tarragona.—Wine and spirits of wine. 660
- 1615 Clariano, Rafael, Reus, Province of Tarragona.—Wine. 660
- 1616 Montagut, José, Reus, Province of Tarragona.—Wine and vinegar. 660
- 1617 Fonts, Mariano, Reus, Province of Tarragona.—Wine. 660
- 1618 Avelló y Boada, Pablo, Reus, Province of Tarragona.—Wine. 660
- 1619 Pujol, José Odona, Reus, Province of Tarragona.—Muscatel wine. 660
- 1620 Valero, Francisco, Reus, Province of Tarragona.—Port wine. 660
- 1621 Rocamora, Pablo, Reus, Province of Tarragona.—Anise-seed brandy. 660
- 1622 Domingo, Tomás, Reus, Province of Tarragona.—Brandy and wine. 660
- 1623 Potan y Mico, Antonio, Vimbodi, Province of Tarragona.—Wine. 660
- 1624 Estradé y Alsamora, José, Vimbodi, Province of Tarragona.—Wine. 660
- 1625 Plassa y Alfonso, José, Vimbodi, Province of Tarragona.—Mistela (national drink). 660
- 1626 Roig y Sancho, Isidro, Vimbodi, Province of Tarragona.—Mistela (national drink). 660
- 1627 Aragonés, Ramon Zamora, Poboleda, Province of Tarragona.—Garnacha (national drink) and wine. 660
- 1628 Figuerolo, Juan, Tarragona.—Wine. 660
- 1629 Morera y Pulles, A., & Son, Tarragona.—Wine and imitations, anise-seed cordial, and garnacha (national drink). 660
- 1630 Carey Bros. & Co., Tarragona.—Wine and imitations. 660
- 1631 Montollu, Plácido Maria de, Morrell, Province of Tarragona.—Wine. 660
- 1632 Sardá, Pablo, Tarragona.—Wine. 660
- 1633 Consul & Virgili, Tarragona.—Wine. 660
- 1634 Nogues, Romeu & Co., Tarragona.—Wine and brandy. 660
- 1635 Oliva, Gregorio, Tarragona.—Spirits of wine and brandy. 660
- 1636 Roig, Ponseti & Co., Tarragona.—Wine. 660
- 1637 Compte, Jaime, Torraja, Province of Tarragona.—Wine. 660
- 1638 Bella, Juan, Valls, Province of Tarragona.—Garnacha wine. 660
- 1639 Coll, José, Valls, Province of Tarragona.—Muscatel wine. 660
- 1640 Roca y Murtra, Ramon, Valls, Province of Tarragona.—Spirits of wine and anise-seed cordial. 660
- 1641 Anglés y Font, José, Ulldemolins, Province of Tarragona.—Red wine. 660
- 1642 Montlleo y Mor, José, Ulldemolins, Province of Tarragona.—Mistela (national drink). 660
- 1643 Figuerola, Antonio, Porrera, Province of Tarragona.—Wine. 660
- 1644 Compte, José Amorós, Porrera, Province of Tarragona.—Wine. 660
- 1645 Amorós, Vicente, Porrera, Province of Tarragona.—Wine. 660
- 1646 Montlleo, Jaime, Porrera, Province of Tarragona.—Garnacha wine. 660
- 1647 Pellicier, Francisco, Porrera, Province of Tarragona.—Garnacha wine. 660
- 1648 Simó, Pio, Porrera, Province of Tarragona.—Wine. 660
- 1649 Simó, José Maria, Porrera, Province of Tarragona.—Garnacha wine. 660
- 1650 Llaberia, Joaquin Sabatér, Porrera, Province of Tarragona.—Wine. 660
- 1651 Capdevila & Ibern, José, Torredembarra, Province of Tarragona.—Wine. 660
- 1652 Sanroma y Boada, Domingo, Torredembarra, Province of Tarragona.—Mistela (national drink). 660
- 1653 Llorat y Fontanillas, José, Torredembarra, Province of Tarragona.—Wine. 660
- 1654 Castellarnau, Joaquin de, Perafort, Province of Tarragona.—Wine. 660
- 1655 Mirét, Juan, Vilaseca, Province of Tarragona.—Mistela (national drink). 660
- 1656 March, Juan de, Vilaseca, Province of Tarragona.—Mistela (national drink) and wine. 660
- 1657 Dalmau y Amat, Domingo de, Montbrió de Tarragona, Province of Tarragona.—Wine and mistela (national drink). 660
- 1658 Porqueras, Juan, Vilella Alta, Province of Tarragona.—Malmsey wine. 660
- 1659 Boulé, José, Reus, Province of Tarragona.—Wine. 660
- 1660 Viñas y Parnies, José, Poboleda, Province of Tarragona.—Wine. 660
- 1661 Montaner y Rincon, José, Reus, Province of Tarragona.—Wine. 660
- 1662 Caselles, Pedro, & Co., Reus, Province of Tarragona.—Wine. 660
- 1663 Borrás, S. S., & Lassalle, Reus, Province of Tarragona.—Wine and imitations. 660
- 1664 Ferratges, José Vidiella, Reus, Province of Tarragona.—Wine. 660
- 1665 Salvadó, Mateó, Riudoms, Province of Tarragona.—Wine. 660
- 1666 Sarro y Salat, Antonio, Bárbara, Province of Tarragona.—Brandy. 660
- 1667 Aragonés, Tomás, Cornudella, Province of Tarragona.—Wine. 660

## Animal and Vegetable Products.

- 1668 Folch, Joaquín Brú, Cambrils, Province of Tarragona.—Wine. 660
- 1669 Gallisa, Juan Aragonés, Dosaiguas, Province of Tarragona.—Wine. 660
- 1670 Crusat, Bartolomé Llebaria, Dosaiguas, Province of Tarragona.—Wine. 660
- 1671 Cabré, José Nolla, Dosaiguas, Province of Tarragona.—Wine. 660
- 1672 Anlesta, José Ciurana, Dosaiguas, Province of Tarragona.—Wine. 660
- 1673 Aragonés, Juan Sangenis, Dosaiguas, Province of Tarragona.—Wine. 660
- 1674 Magaña, Luis de, Falset, Province of Tarragona.—Wines. 660
- 1675 Anguera y Angles, Ramon, Falset, Province of Tarragona.—Mistela (national drink) and wine. 660
- 1676 Ortiz, Emilio, Huelbes, Ocaña, Province of Toledo.—Wine. 660
- 1677 Gurrido, Valentín, Ocaña, Province of Toledo.—Wine and brandy. 660
- 1678 Caballero y Cabello, Martín, Ocaña, Province of Toledo.—Wine. 660
- 1679 Basarán, Isidoro, Olias del Rey, Province of Toledo.—Wine. 660
- 1680 Lázaro, Olallo, Talavera de la Reina, Province of Toledo.—Anise-seed cordial. 660
- 1681 Perera & Sons, Sagunto, Province of Valencia.—Wine. 660
- 1682 Requena, Manuel, & Sons, Játiva, Province of Valencia.—Wine. 660
- 1683 Suñer, Enrique, Masanasa, Province of Valencia.—Dr. Suñer's liquor. 660
- 1684 Caruana Bros., Bétera, Province of Valencia.—Wine. 660
- 1685 Comas y Delgado, Rafael, Onteniente, Province of Valencia.—Wine. 660
- 1686 Villar, Manuel, Sagunto, Province of Valencia.—Wine. 660
- 1687 Lluch, Francisco, Sagunto, Province of Valencia.—Wine. 660
- 1688 Valero, Juan, Requena, Province of Valencia.—Wine. 660
- 1689 Pifanço, Norberto, Requena, Province of Valencia.—Wine. 660
- 1690 Omlin, Juan, Requena, Province of Valencia.—Wine. 660
- 1691 Moron, Francisco de P., & Co., Albaida, Province of Valencia.—Brandy. 660
- 1692 Pujol, José María, Valencia.—Wine. 660
- 1693 Gisbert, Mariano, Torrente, Province of Valencia.—Wine. 660
- 1694 Iranzo, Jaime, Turis, Province of Valencia.—Wine. 660
- 1695 Navarro, Eduardo, Turis, Province of Valencia.—Wine. 660
- 1696 Latorre, Federico, Turis, Province of Valencia.—Wine. 660
- 1697 Artigues, Serapio, Játiva, Province of Valencia.—Wine. 660
- 1698 Ollas, Vicente, Chiva, Province of Valencia.—Wine. 660
- 1699 Torner, Juan, Carcagente, Province of Valencia.—Orange wine. 660
- 1700 Ferrandis y Soler, José, Onteniente, Province of Valencia.—Wine. 660
- 1701 Lorenzo Puig Bros., Monsenat, Province of Valencia.—Wine. 660
- 1702 Pieza, Honorato, Monsenat, Province of Valencia.—Wine. 660
- 1703 Pardo, Joaquín, Valencia.—Orange wine. 660
- 1704 Reig y García, Fernando, Puebla, de Vallbona, Province of Valencia.—Wine. 660
- 1705 Albors, Carlos, Picasent, Province of Valencia.—Wine. 660
- 1706 Bodi, Salvador, Carcagente, Province of Valencia.—Orange wine. 660
- 1707 Lassala, Vicente, Llano de Cuarte, Province of Valencia.—Wine. 660
- 1708 Ricart y Sans, Salvador, Rafelbuñol, Province of Valencia.—Wine. 660
- 1709 Starico y Ruiz, Ricardo, Ribarroja, Province of Valencia.—Wine. 660
- 1710 Bosca y Pascual, Blas, Puebla de Rugat, Province of Valencia.—Wine. 660
- 1711 Calabuyg, Bartolomé, Valencia.—Wine. 660
- 1712 Cañamas, José Damián Capcir, Puebla de Rugat, Province of Valencia.—Wine. 660
- 1713 Domenech, Angel, Valencia.—Wine and orange wine. 660
- 1714 Lavarias, Antonio, Cheste, Province of Valencia.—Red wine. 660
- 1715 Guillen, Valero Navarro, Cheste, Province of Valencia.—Red wine. 660
- 1716 Campos, Vicente, Cheste, Province of Valencia.—Red wine. 660
- 1717 García, Francisco, Cheste, Province of Valencia.—Red wine. 660
- 1718 Tarín, German, Cheste, Province of Valencia.—Red wine. 660
- 1719 Luey, Leoncio, Cheste, Province of Valencia.—Red wine. 660
- 1720 Martí, Salvador, Cheste, Province of Valencia.—Red wine. 660
- 1721 Jordan, Vicente, Cheste, Province of Valencia.—Wine. 660
- 1722 Tamarit, Eulogio, Cheste, Province of Valencia.—Wine. 660
- 1723 García, Pascual, Cheste, Province of Valencia.—Wine. 660
- 1724 Jordan, Manuel, Cheste, Province of Valencia.—Wine. 660
- 1725 García, Luis Campos, Cheste, Province of Valencia.—Wine. 660
- 1726 Ortega, Vicente, Valencia.—Liquors. 660
- 1727 Costa, José Plá, Ollería, Province of Valencia.—Wine. 660
- 1728 Diego, Francisco Polop, Játiva, Province of Valencia.—Brandy, mistela, and wine. 660
- 1729 Nager y Juan, Pedro J., Ollería, Province of Valencia.—Wine. 660
- 1730 Calvo, Francisco, Valencia.—Orange wine. 660
- 1731 Herrera, José, Nava del Rey, Province of Valladolid.—Wine. 660
- 1732 Sañudo, Ramon Trucba, Nava del Rey, Province of Valladolid.—Wine. 660
- 1733 Pimentel, Pedro Antonio, Rueda, Province of Valladolid.—Vinegar. 660



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- 1734 Villalva, Benigno, Corrales de Duero, Province of Valladolid.—Wine. 660
- 1735 Alonso, Bernardo Real, Peñafior, Province of Valladolid.—Wine. 660
- 1736 Prasencio, Mariano, Tudela de Duero, Province of Valladolid.—Wine. 660
- 1737 Zunzunegui, Angel, Cabezon, Province of Valladolid.—Wine. 660
- 1738 Malfaz, Agustin, Cabezon, Province of Valladolid.—Wine. 660
- 1739 Revila, Antonio, Cabezon, Province of Valladolid.—Wine. 660
- 1740 Gonzalez, Benito, Cabezon, Province of Valladolid.—Wine. 660
- 1741 Villaverde, Rafael, Cabezon, Province of Valladolid.—Wine. 660
- 1742 Sotillo, Manuel, Valladolid.—Wine. 660
- 1743 Redondo Bros., Valladolid.—Wine. 660
- 1744 Zurbano, José, Cabezon, Province of Valladolid.—Wine. 660
- 1745 Red, Baltasar de la, Cabezon, Province of Valladolid.—Wine. 660
- 1746 Pimentel, Casilda Arévalo de, Rueda, Province of Valladolid.—Wine. 660
- 1747 Vaca, Francisco Cabeza de, Puente Duero, Province of Valladolid.—Wine. 660
- 1748 Caballero, Marquis of, Nava del Rey, Province of Valladolid.—Wine. 660
- 1749 Eyries, Agustin, Valladolid.—Wine. 660
- 1480 Diaz, Juan, Valladolid.—Liquors. 660
- 1751 Mesones, Mariano Bayon, Rueda, Province of Valladolid.—Wine. 660
- 1752 Corporation of Medina de Campo, Province of Valladolid.—Wine. 660
- 1753 Díez, Crispulo Paredes, Valladolid.—Liquors. 660
- 1754 Gimeno, Mariano, Rueda, Province of Valladolid.—Wine. 660
- 1755 Board of Agriculture, Valbuena de Duero, Province of Valladolid.—Wine and brandy. 660
- 1756 Costo y Cuenca, Eloy, Valladolid.—Liquors. 660
- 1757 Díez y Díez, Luis, Valladolid.—Wine. 660
- 1758 Montero, Ramon Bayon, Rueda, Province of Valladolid.—Wine. 660
- 1759 Arias, Francisco Galan, Fuentesauco, Province of Zamora.—Wine. 660
- 1760 Serrano, Manuel, Formoselle, Province of Zamora.—Wine. 660
- 1761 Puga, Sons of, Zamora.—Liquors. 660
- 1762 Requejo, Miguel, Zamora.—Wine. 660
- 1763 Furitero, Leonardo, Toro, Province of Zamora.—Wine. 660
- 1764 Villaboa, Victoriano, Zamora.—Wine. 660
- 765 Weches, Santiago, Coreses, Province of Zamora.—Wine. 660
- 766 Temprano, José, Verdemarban, Province of Zamora.—Wine. 660
- 1767 Pernia, Nicasio, Castro Verde, Province of Zamora.—Wine. 660
- 1768 Dieguez, Manuel, Zamora.—Anise-seed cordial. 660
- 1769 Royo, Mariano, Zamora.—Alcohol. 660
- 1770 Porta, Mariano, Zaragoza.—Anise-seed cordial and prepared anise-seed used for its manufacture. 660
- 1771 Pórtoles, Miguel, Zaragoza.—Anise-seed cordial. 660
- 1772 Lichtenstein, Julio, Carriñena, Province of Zaragoza.—Wine. 660
- 1773 Lahoz, Victorio, Escatron, Province of Zaragoza.—Anise-seed cordial. 660
- 1774 Arifio, Antonio, Escatron, Province of Zaragoza.—Anise-seed cordial. 660
- 1775 Lacaze, Juan Pablo, Zaragoza.—Wine. 660
- 1776 Figueras, Inigo, Zaragoza.—Wine. 660
- 1777 Perez, Mariano, Zaragoza.—Wine. 660
- 1778 Vallier, José, Zaragoza.—Wine. 660
- 1779 Bailo, Angel, Habana, Cuba.—Liquors. 660
- 1780 Zulueta, Julian, Habana, Cuba.—Brandies. 660
- 1781 Soler, L., & Co., Cárdenas, Cuba.—Brandies. 660
- 1782 Central Commission of the Island, Habana, Cuba.—Sherry. 660
- 1783 Domech, Pedro, Jerez.—Sherry. 660
- 1784 Duff, Gordon & Co., Jerez.—Sherry. 660
- 1785 Loring Bros., Málaga.—Málaga and Montilla wine. 660
- 1786 Schoki, Málaga.—Málaga. 660
- 1787 Vintroy Vila, Agustin, Barcelona.—Preserved yeast. 661
- 1788 Cano, Antonio, Carrion de Calatrava, Province of Ciudad-Real.—Crackers. 661
- 1789 Rivera Guarner, Alicante.—Chocolate. 661
- 1790 Barrengoa, Dámaso de, Ciudad-Real.—Chocolate. 661
- 1791 Blanco, José Maria, Santiago, Province of La Coruña.—Chocolate. 661
- 1792 Leal, Francisco, Coruña.—Chocolate. 661
- 1793 Castro, Enrique Calvo de, Ferrol, Province of La Coruña.—Chocolate. 661
- 1794 Palá, Juan, Huesca.—Chocolate. 661
- 1795 Prado, Máximo Alonso de, Leon.—Chocolate. 661
- 1796 Alonso, Pedro Antonio, Mansilla de las Mulas, Province of Leon.—Chocolate. 661
- 1797 Fernandez, José, Sahagun, Province of Leon.—Chocolate. 661
- 1798 Alonso, Blas, Widow of, Leon.—Chocolate. 661
- 1799 Silva, Tomás Rubio, Astorga, Province of Leon.—Chocolate. 661

## Animal and Vegetable Products.

- 1800 Panero y Martinez, Juan, Astorga, Province of Leon.—Chocolate. 661
- 1801 Garcia, Manuel, Lérída.—Chocolate. 661
- 1802 Reixades, Antonio, Lérída.—Chocolate. 661
- 1803 Ruiz, Francisco Enciso de, Munnilla, Province of Logroño.—Chocolate. 661
- 1804 Fernandez, Francisco, & Bro., Lugo.—Chocolate. 661
- 1805 Meric & Co., Madrid.—Chocolate. 661
- 1806 Lopez, Matias, Madrid.—Chocolate. 661
- 1807 Lopez & Vaquez, Madrid.—Chocolate. 661
- 1808 Dubois, L., Widow of, Murcia.—Chocolate. 661
- 1809 Bobo, Francisco Perez, Orense.—Chocolate. 661
- 1810 Anta y Temes, Federico, Orense.—Chocolate. 661
- 1811 Fernandez, Antonio Maria, Oviedo.—Chocolate. 661
- 1812 Acebal y Menendez, Benito, Oviedo.—Chocolate. 661
- 1813 Ortiz, Tadeo, & Sons, Palencia.—Chocolate. 661
- 1814 Garcia, Benito, Pontevedra.—Chocolate. 661
- 1815 Crespo, José Sanchez.—Chocolate. 661
- 1816 Pies, Federico Sanchez, Salamanca.—Chocolate. 661
- 1817 Nacar, Juan Prieto, Salamanca.—Chocolate. 661
- 1818 Ramos, Eustaquio, Soria.—Chocolate. 661
- 1819 Macaya, Juan, Reus, Province of Tarragona.—Chocolate. 661
- 1820 Gonzalez, José Maria, Talavera, Province of Toledo.—Chocolate. 661
- 1821 Lazaro, Olallo, Talavera, Province of Toledo.—Chocolate. 661
- 1822 Cuevas & Garcia, Valladolid.—Chocolate. 661
- 1823 Escarda, Salustiano Marín, Benavente, Province of Zamora.—Chocolate. 661
- 1824 Escudero, Dionisio, & Son, Tarazona, Province of Zaragoza.—Chocolate. 661
- 1825 Ascaso, Domingo, Zaragoza.—Chocolate. 661
- 1826 Iriarte, José Maria, Habana, Cuba.—Chocolate. 661
- 1827 Fernandez, José, Matanzas, Cuba.—Chocolate. 661
- 1828 Plana & Co., Habana, Cuba.—Chocolate. 661
- 1829 Amores, Julian, Elche de la Sierra, Province of Alcabete.—Olive oil. 662
- 1830 Maroni, José, Hellin, Province of Alcabete.—Olive oil. 662
- 1831 Sandoval, José Joaquin, Jacarilla, Province of Alicante.—Olive oil. 662
- 1832 Payas, Ciro Perez, Monóvar, Province of Alicante.—Olive oil. 662
- 1833 Rico, Antonio Perez, Monóvar, Province of Alicante.—Olive oil. 662
- 1834 Verdú, Remedios Perez, Monóvar, Province of Alicante.—Olive oil. 662
- 1835 Albert, L. Perez, & Co., Monóvar, Province of Alicante.—Olive oil. 662
- 1836 Alegret, Emilio Perez, Ibi, Province of Alicante.—Olive oil. 662
- 1837 Pina, Juan Bautista, Monforté, Province of Alicante.—Olive oil. 662
- 1838 Verdú y Perez, Joaquin, Monóvar, Province of Alicante.—Olive oil. 662
- 1839 Moreno, Pedro Contreras, Veles-Rubio, Province of Almería.—Olive oil. 662
- 1840 Trell, Miguel del, Berja, Province of Almería.—Natural olive oil. 662
- 1841 Meson José, Arenas de San Pedro, Province of Avila.—Olive oil. 662
- 1842 Patiño, José Maria, Cabeza de Vaca, Province of Badajoz.—Olive oil. 662
- 1843 Cáceres, Damian, Guareña, Province of Badajoz.—Olive oil. 662
- 1844 Fernandez, Secundino, Zafra, Province of Badajoz.—Olive oil. 662
- 1845 Delgado, Francisco Gomez, Badajoz.—Olive oil. 662
- 1846 Fluxá y Palet, Miguel, Selva, Balearic Islands.—Oils. 662
- 1847 Zaforteza, Juan Burguez, Buñolas, Balearic Islands.—Oils. 662
- 1848 Puig & Llagostera Bros., Barcelona.—Olive oil. 662
- 1849 Forcar y Tió, Manuel, Barcelona.—Olive oil. 662
- 1850 Fornell, Ramon, & Co., Barcelona.—Olive oil. 662
- 1851 Oliver y Coll, Francisco, Ripoll, Province of Barcelona.—Olive oil. 662
- 1852 Pons, Antonio Castañ de, Esparraguera, Province of Barcelona.—Olive oil. 662
- 1853 Ferran, Manuel, Barcelona.—Olive oil. 662
- 1854 Soler y Stussa, Valentin, Barcelona.—Oils. 662
- 1855 Castell de Mas, Joaquin Pedrosa de, Esparraguera, Province of Barcelona.—Olive oil. 662
- 1856 Villegas, Vicente Villarroel, Alcántara, Province of Cáceres.—Olive oil. 662
- 1857 Ayaz, José Diaz, Plasencia, Province of Cáceres.—Olive oil. 662
- 1858 Santivañez, Pedro José, Casar de Palomero, Province of Cáceres.—Olive oil. 662
- 1859 Arjona, Manuel, Jaraiz, Province of Cáceres.—Olive oil. 662
- 1860 Gomez, Juan Crisóstomo Gomez, Villamiel, Province of Cáceres.—Olive oil. 662
- 1861 Botejana, Juan Vicente, Villas Buenas, Province of Cáceres.—Olive oil. 662
- 1862 Hernandez, Juan, Gata, Province of Cáceres.—Natural olive oil. 662
- 1863 Casillas, Ramon, Acebo, Province of Cáceres.—Olive oil. 662
- 1864 Bacás y Estevez, Ignacio, Cilleiros, Province of Cáceres.—Olive oil. 662

## Animal and Vegetable Products.

- SPAIN.**  
*Animal and Vegetable Products.*  
 1896 Uruburu, José, Montemayor, Province of Córdoba.—Olive oil. 662
- 1897 Moreno, José Maria, Montemayor, Province of Córdoba.—Olive oil. 662
- 1898 Corporation of Bujalance, Province of Córdoba.—Olive oil. 662
- 1899 Prieto, Sebastian, Encinas-Reales, Province of Córdoba.—Olive oil. 662
- 1900 Pavon, Pablo, Baena, Province of Córdoba.—Olive oil. 662
- 1901 Bastida, Martin, Montoro, Province of Córdoba.—Olive oil. 662
- 1902 Cabezas y Sarabia, José, Montoro, Province of Córdoba.—Olive oil. 662
- 1903 Piédrola, Rafael, Montoro.—Province of Córdoba.—Olive oil. 662
- 1904 Lara y Pineda, Rafael J. de, Montoro, Province of Córdoba.—Olive oil. 662
- 1905 Saenz, Eusebio, Lucena, Province of Córdoba.—Olive oil. 662
- 1906 Carmona, Joaquina, Lucena, Province of Córdoba.—Olive oil. 662
- 1907 Algar, Francisco, Lucena, Province of Córdoba.—Olive oil. 662
- 1908 Valdecañas, Count of, Lucena, Province of Córdoba.—Olive oil. 662
- 1909 Medinaceli, Duke of, Lucena, Province of Córdoba.—Olive oil. 662
- 1910 Gomez, Antonio Enrique, Montoro, Province of Córdoba.—Olive oil. 662
- 1911 Escribano, Luis, Pozoblanco, Province of Córdoba.—Olive oil. 662
- 1912 Galan, Alfonso Blanco, Dos-Torres, Province of Córdoba.—Olive oil. 662
- 1913 Castillejo, Pedro, Fuente-Ovejuna, Province of Córdoba.—Olive oil. 662
- 1914 Cabello, José Garcia, Santa-Ella, Province of Córdoba.—Olive oil. 662
- 1915 Criado, Dolores, Villa del Rio, Province of Córdoba.—Olive oil. 662
- 1916 Zamora, Pedro Alcalá, Priego, Province of Córdoba.—Olive oil. 662
- 1917 Valverde, Francisco Aguilera, Priego, Province of Córdoba.—Olive oil. 662
- 1918 Castilla, José Eugenio, Priego, Province of Córdoba.—Olive oil. 662
- 1919 Roldan, Manuel, Montoro, Province of Córdoba.—Olive oil. 662
- 1920 Cano, Rafael, Adamuz, Province of Córdoba.—Olive oil. 662
- 1921 Cano, Juan, Adamuz, Province of Córdoba.—Olive oil. 662
- 1922 Estrado y Perjano, Ramon, Adamuz, Province of Córdoba.—Olive oil. 662
- 1923 Lara, Antonio Crespo, Benameji, Province of Córdoba.—Olive oil. 662
- 1924 Rio, Pedro del, Castro del Rio, Province of Córdoba.—Olive oil. 662
- 1925 Sepúlveda, V. Muñoz de, Córdoba.—Olive oil. 662
- 1926 Campo, Francisco Escobar, Rubielos Bajos, Province of Cuenca.—Olive oil. 662
- 1927 Cid, Julian, Tarancon, Province of Cuenca.—Olive oil. 662
- 1874 García y Moreno, Julian, Altura, Province of Castellon de la Plana.—Virgin olive oil. 662
- 1875 Escribano, José, Vinaró, Province of Castellon de la Plana.—Olive oil. 662
- 1876 Arnau & Tomás, Segorbe, Province of Castellon de la Plana.—Olive oil. 662
- 1877 Ricart, Juan Martinez, Segorbe, Province of Castellon de la Plana.—Oil. 662
- 1878 Aguila y Aguila, Santiago del, Villarubia de los Ojos, Province of Ciudad-Real.—Olive oil. 662
- 1879 Medrano, José, Ciudad-Real.—Olive oil. 662
- 1880 Milla, Manuel, Montoro, Province of Córdoba.—Olive oil. 662
- 1881 Infante, Juan de Dios, Villaviciosa, Province of Córdoba.—Olive oil. 662
- 1882 Cantual y Lopez, José, Córdoba.—Olive oil. 662
- 1883 Estrada, Eduardo, Aguilar, Province of Córdoba.—Olive oil. 662
- 1884 Santaló, Estéban, Córdoba.—Olive oil. 662
- 1885 San Bernardo, Count of, Córdoba.—Olive oil. 662
- 1886 Alvarez, Rafael Ceballos, Adamion, Province of Córdoba.—Olive oil. 662
- 1887 Alguacil, Miguel Pineda, Espejo, Province of Córdoba.—Olive oil. 662
- 1888 Lopez, Espejo, Province of Córdoba.—Olive oil. 662
- 1889 Casado, Francisco, Espejo, Province of Córdoba.—Olive oil. 662
- 1890 Vega y Lopez, Luis, Espejo, Province of Córdoba.—Olive oil. 662
- 1891 Pineda, José Ramirez, Espejo, Province of Córdoba.—Olive oil. 662
- 1892 Medinaceli, Duchess, Widow of, Espejo, Province of Córdoba.—Olive oil. 662
- 1893 Fuente el Salce, Count of, Montoro, Province of Córdoba.—Olive oil. 662
- 1894 Rodriguez, José, Montemayor, Province of Córdoba.—Olive oil. 662
- 1895 Moreno, Sebastian, Montemayor, Province of Córdoba.—Olive oil. 662

## Animal and Vegetable Products.

- 1928 Torres, Mariano L., Barchin del Hoyo, Province of Cuenca.—Olive oil. 662
- 1929 Baillo, José María, Barchin del Hoyo, Province of Cuenca.—Olive oil. 662
- 1930 Reyes y Rich, Juan A., Guadalajara.—Olive oil. 662
- 1931 Molina, Federico, Rociana, Province of Huelva.—Olive oil. 662
- 1932 Soldán, Antonio, La Palma, Province of Huelva.—Olive oil. 662
- 1933 Carrasco, José María, Bonares, Province of Huelva.—Olive oil. 662
- 1934 Zambrano, José A., Villalba del Alcor, Province of Huelva.—Olive oil. 662
- 1935 Iñiguez, José, Gibráleon, Province of Huelva.—Olive oil. 662
- 1936 Iñiguez, Encarnacion, Gibráleon, Province of Huelva.—Olive oil. 662
- 1937 Morales, Teresa, San Juan del Puerto, Province of Huelva.—Olive oil. 662
- 1938 Santa, Martín María, San Juan del Puerto, Province of Huelva.—Olive oil. 662
- 1939 Marquez, Rufino J., Manzanilla, Province of Huelva.—Olive oil. 662
- 1940 Velarde, José Eduardo, Manzanillas, Province of Huelva.—Olive oil. 662
- 1941 Cerero, Luis, Trigueros, Province of Huelva.—Olive oil. 662
- 1942 Montiel, Eliecer, Trigueros, Province of Huelva.—Virgin olive oil. 662
- 1943 Ortá, Manuel de, Trigueros, Province of Huelva.—Olive oil. 662
- 1944 Rodríguez, José Rodríguez, Trigueros, Province of Huelva.—Olive oil. 662
- 1945 Escolar, Angel, Almonte, Province of Huelva.—Olive oil. 662
- 1946 Cepeda, Ignacio de, Almonte, Province of Huelva.—Olive oil. 662
- 1947 Lagares, Francisco, Almonte, Province of Huelva.—Olive oil. 662
- 1948 Pineda, Nicanor Infante, Aracena, Province of Huelva.—Olive oil. 662
- 1949 Oliva, Juan Martín de, Aracena, Province of Huelva.—Olive oil. 662
- 1950 Carnes, Eulogio Martín, Aracena, Province of Huelva.—Olive oil. 662
- 1951 Ramirez, Ignacio Nagales, Aracena, Province of Huelva. 662
- 1952 Barrera, Joaquin Moya, Aracena, Province of Huelva.—Olive oil. 662
- 1953 Cruz, Rivero, Rafael Triana de la, Huelva.—Olive oil. 662
- 1954 Las Cuebas, Fernando de, Huelva.—Olive oil. 662
- 1955 Mora, Antonio de, Huelva.—Olive oil. 662
- 1956 Figueroa, Eduardo, Huelva.—Olive oil. 662
- 1957 Arnal, Dionisio, Castelflorite, Province of Huesca.—Olive oil. 662
- 1958 Nasarre, Voto, Albalate de Cinca, Province of Huesca.—Olive oil. 662
- 1959 Laguna, Celeste, Sariñena, Province of Huesca.—Olive oil. 662
- 1960 Lapiedra, Joaquin, Sariñena, Province of Huesca.—Olive oil. 662
- 1961 Las Almenas, Count of, Espejuy, Province of Jaen.—Olive oil. 662
- 1962 Campos, Antonio Lopez, Ubeda, Province of Jaen.—Olive oil. 662
- 1963 Ibañez, Luis Gallego, Cazoria, Province of Jaen.—Olive oil. 662
- 1964 Acapulco, Marquis of, Torre Don Jimeno, Province of Jaen.—Olive oil. 662
- 1965 Villalba, Antonio Fernandez, Torre Don Jimeno, Province of Jaen.—Olive oil. 662
- 1966 Manjon, Juan A., Iznatoraf, Province of Jaen.—Olive oil. 662
- 1967 Salcedo y Games, Miguel, Jimena, Province of Jaen.—Olive oil. 662
- 1968 Torres, Manuel Alfonso, Jimena, Province of Jaen.—Olive oil. 662
- 1969 Oliveres, Mauricio, Torreserona, Province of Lérida.—Olive oil. 662
- 1970 Teréz, Ignacio, Tárrega, Province of Lérida.—Olive oil. 662
- 1971 Corporation of Agramunt, Province of Lérida.—Olive oil. 662
- 1972 Corporation of Puigvert, Province of Lérida.—Olive oil. 662
- 1973 Corporation of Las Borjas, Province of Lérida.—Olive oil. 662
- 1974 Corporation of Vinaixa, Province of Lérida.—Olive oil. 662
- 1975 Alos, Francisco, Balaguer, Province of Lérida.—Olive oil. 662
- 1976 Pinós, José María, Lérida.—Olive oil. 662
- 1977 Lafont, Andrés, Borjas, Province of Lérida.—Oil. 662
- 1978 Lopez, Manuel, Puigvert, Province of Lérida.—Oil. 662
- 1979 Ball, José, Agramunt, Province of Lérida.—Olive oil. 662
- 1980 Ron, Ramon, Vinaixa, Province of Lérida.—Oil. 662
- 1981 Zubia, Ildefonso, Logroño.—Olive oil. 662
- 1982 Lasan, Marquis of, Cuscurrita de Rio Tiron, Province of Logroño.—Olive oil. 662
- 1983 Alcalde, Javier, Logroño.—Olive oil. 662
- 1984 Pascual, Elias, Alfarnate, Province of Málaga.—Olive oil. 662
- 1985 Corporation of Teba, Province of Málaga.—Olive oil. 662
- 1986 Garcia, Dolores, Widow of Estor, Murcia.—Olive oil. 662
- 1987 Lopez, José María, Caravaca, Province of Murcia.—Oil. 662
- 1988 Coracér Agustín Mascareñas, Verin, Province of Orense.—Olive oil. 662
- 1989 Velasco, Manuel, Verin, Province of Orense.—Oil. 662
- 1990 Ullán, Romualdo, Masueco, Province of Salamanca.—Olive oil. 662
- 1991 Martín, Lorenzo Calvo, Mogarnas, Province of Salamanca.—Olive oil. 662
- 1992 Garcia, José Sanchez, Fregeneda, Province of Salamanca.—Olive oil. 662
- 1993 La Viesca, Marquis of, Fregeneda, Province of Salamanca.—Olive oil. 662
- 1994 Bullon, Agustín, Miranda del Castañar, Province of Salamanca.—Olive oil. 662
- 1995 Corbalan, Juan, Sancelle, Province of Salamanca.—Olive oil. 662

## Animal and Vegetable Products.

- 1996 Villaranca, Ramon Miguel, Hinojosa de Duero, Province of Salamanca.—Olive oil. 662
- 1997 Ortal, Ignacio, Fregeneda, Province of Salamanca.—Olive oil. 662
- 1998 Villaranda, Joaquin Romo, Hinojosa de Duero, Province of Salamanca.—Olive oil. 662
- 1999 Gascon, Andrés Sanchez, Cepeda, Province of Salamanca.—Olive oil. 662
- 2000 Paulino, Diego Perez, Fregeneda, Province of Salamanca.—Olive oil. 662
- 2001 Herrero, Julian, Lumbrales, Province of Salamanca.—Olive oil. 662
- 2002 Paulino, Cipriano Perez, Fregeneda, Province of Salamanca.—Olive oil. 662
- 2003 Mendoza, Ignacio Halcon, Lebrija, Province of Sevilla.—Olive oil. 662
- 2004 Cisneros, Honorio de, Constantina, Province of Sevilla.—Olive oil. 662
- 2005 Morejon, Manuel Solis, Cantillana, Province of Sevilla.—Olive oil. 662
- 2006 Arenas, Antonio Rivas, Cantillana, Province of Sevilla.—Olive oil. 662
- 2007 Teruel, Pedro, & Bros., Cantillana, Province of Sevilla.—Olive oil. 662
- 2008 Reina, Claudio Gimenez de, Arahá, Province of Sevilla.—Olive oil. 662
- 2009 Quintanilla, Antonio Torres, Arahá, Province of Sevilla.—Olive oil. 662
- 2010 Zallas y Trigueros, Miguel, Sevilla.—Olive oil. 662
- 2011 Piñar, Enrique, & Bros., Arahá, Province of Sevilla.—Olive oil. 662
- 2012 Benjumea y Jiló, Eduardo, Arahá, Province of Sevilla.—Olive oil. 662
- 2013 Andrade, Manuel Zayas, Arahá, Province of Sevilla.—Olive oil. 662
- 2014 Puig, Juan, Sevilla.—Olive oil. 662
- 2015 Garcia, Pedro Leana, Sevilla.—Olive oil. 662
- 2016 Leygonier, Cayetano, Sevilla.—Olive oil. 662
- 2017 Puerta Zayas, Aniceto de la, Sevilla.—Olive oil. 662
- 2018 Serrano, Miguel Perez, Olivares, Province of Sevilla.—Olive oil. 662
- 2019 Masa, Juan Gomez de la, Olivares, Province of Sevilla.—Olive oil. 662
- 2020 Daoiz, Count of, Moron, Province of Sevilla.—Olive oil. 662
- 2021 Daoiz, José, Moron, Province of Sevilla.—Olive oil. 662
- 2022 Angulo, José, Moron, Province of Sevilla.—Olive oil. 662
- 2023 Mendez, Felipe, Mairena del Alcor, Province of Sevilla.—Olive oil. 662
- 2024 La Hasta, Lorenzo Dominguez de, Carmona, Province of Sevilla.—Olive oil. 662
- 2025 Velasco, Ramon, Carmona, Province of Sevilla.—Olive oil. 662
- 2026 Reina, José Martinez de, Dos-Hermanas, Province of Sevilla.—Olive oil. 662
- 2027 Ibarra, I. M., & Sons, Dos-Hermanas, Province of Sevilla.—Olive oil. 662
- 2028 Sanchez, José Arcos, Coronil, Province of Sevilla.—Olive oil. 662
- 2029 Rosa y Silva, José de la, Villamanrique, Province of Sevilla.—Olive oil. 662
- 2030 La Motilla, Marquis of, Pilas, Province of Sevilla.—Olive oil. 662
- 2031 Martinez, Joaquin, Bros., Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2032 Martinez, Casimiro Carro, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2033 Orejuela, Francisco de, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2034 Dominguez, Pedro, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2035 Bascon, Antonio, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2036 Peña, José Gonzalez de la, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2037 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2038 Calero, Juan, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2039 Giraldez, Vicente, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2040 Rirola, Rafael, Utrera, Province of Sevilla.—Olive oil and pressed olives. 662
- 2041 Franquet y Dara, José, Gandesa, Province of Tarragona.—Olive oil. 662
- 2042 Grau, José Maria de, Mas-Pujols, Province of Tarragona.—Olive oil. 662
- 2043 Sanz y Salvá, Francisco, Mas-Pujols, Province of Tarragona.—Olive oil. 662
- 2044 Llausado y Pamies, José, Mas-Pujols, Province of Tarragona.—Olive oil. 662
- 2045 Pamies y Ortoneda, Juan, Mas-Pujols, Province of Tarragona.—Olive oil. 662
- 2046 Orovio, Manuel de, Riudoms, Province of Tarragona.—Olive oil. 662
- 2047 Salvadó, Salvador, Riudoms, Province of Tarragona.—Olive oil. 662
- 2048 Salvadó, Mateo, Riudoms, Province of Tarragona.—Olive oil. 662
- 2049 Miret, Juan, Constanti, Province of Tarragona.—Olive oil. 662
- 2050 Domingo, Tomás, Constanti, Province of Tarragona.—Olive oil. 662
- 2051 Montoliú, Plácido Maria de, Morell, Province of Tarragona.—Olive oil. 662
- 2052 Consul & Virgili, Tarragona.—Olive oil. 662
- 2053 Magriña y Suñer, Antonio, Gandesa, Province of Tarragona.—Olive oil. 662
- 2054 March, Juan de, Vilaseca, Province of Tarragona.—Olive oil. 662
- 2055 Corporation of Amposta, Province of Tarragona.—Olive oil. 662
- 2056 Buñil, B., Reus, Province of Tarragona.—Olive oil. 662

## Animal and Vegetable Products, Textile Substances.

- 2057 Montagut, José, Ila, Province of Tarragona.—Olive oil.** 662  
**2058 Pellicér, José, Reus, Province of Tarragona.—Olive oil.** 662  
**2059 Fumaña Bros., Reus, Province of Tarragona.—Olive oil.** 662  
**2060 Odena y Pujol, José, Reus, Province of Tarragona.—Olive oil.** 662  
**2061 Avello, A., & Son, Reus, Province of Tarragona.—Olive oil.** 662  
**2062 Gasull, Bartolomé, Reus, Province of Tarragona.—Olive oil.** 662  
**2063 Gil, Francisco, Reus, Province of Tarragona.—Olive oil.** 662  
**2064 Morlius, José Maria, Reus, Province of Tarragona.—Olive oil.** 662  
**2065 Rincon, José Montaner, Reus, Province of Tarragona.—Olive oil.** 662  
**2066 Sirvent y Oliver, Pedro, Reus, Province of Tarragona.—Olive oil.** 662  
**2067 Carol, Antonio, & Co., Reus, Province of Tarragona.—Olive oil.** 662  
**2068 Esteve, D. A., Widow & Son of, Reus, Province of Tarragona.—Olive oil.** 662  
**2069 Basseda y Andreu, Miguel, Reus, Province of Tarragona.—Olive oil.** 662  
**2070 Zamora, Francisco, Reus, Province of Tarragona.—Olive oil.** 662  
**2071 Peña y Mach, Agustín, Scala-Dei, Province of Tarragona.—Olive oil.** 662  
**2072 Gañcia, Sebastian, Scala-Dei, Province of Tarragona.—Olive oil.** 662  
**2073 Robles, Sebastian Garcia de, Scala-Dei, Province of Tarragona.—Olive oil.** 662  
**2074 Gatell y Folcha, Juan, Altafulla, Province of Tarragona.—Oil.** 662  
**2075 Siscar, Ramon, La Canonja, Province of Tarragona.—Oil.** 662  
**2076 Indo, Valentin Martinez, Argis, Province of Toledo.—Olive oil.** 662  
**2077 Redondo, Juan Bautista, Carmena, Province of Toledo.—Oils.** 662  
**2078 Basaran, Isidoro, Ollas del Rey, Province of Toledo.—Olive oil.** 662  
**2079 Moreno, Manuel, Ortiz, Ocaña, Province of Toledo.—Olive oil.** 662  
**2080 Diego, Francisco Polop, Játiva, Province of Valencia.—Olive oil.** 662  
**2081 Diego y Carsi, Ignacio & José, Játiva, Province of Valencia.—Oil.** 662  
**2082 Calabuyg, Bartolomé, Bocayrente, Province of Valencia.—Olive oil.** 662  
**2083 Lasalla y Palomares, Vicente, Masia de la Mar, Province of Valencia.—Olive oil.** 662  
**2084 Cañamas, Blas Antonio, Olisa, Province of Valencia.—Olive oil.** 662  
**2085 Albors y Albors, Carlos, Picasent, Province of Valencia.—Olive oil.** 662  
**2086 Valdobi, Rafael Gonzalez, Torrente, Province of Valencia.—Olive oil.** 662  
**2087 Reig y Garcia, Fernando, Puebla de Valbona, Province of Valencia.—Olive oil.** 662  
**2088 Ollas, Vicente, Chiva, Province of Valencia.—Olive oil.** 662  
**2089 Bremont, Manuel Sans, Bemfayo de Espioca, Province of Valencia.—Olive oil.** 662  
**2090 Latorre, Federico, Turis, Province of Valencia.—Olive oil.** 662  
**2091 Cancellor, Saturnino, Valencia.—Peanut oil.** 662  
**2092 Caruana & Bros., Betera, Province of Valencia.—Olive oil.** 662  
**2093 Flores, P. Manuel Serrano, Fermoselle, Province of Zamora.—Olive oil.** 662  
**2094 Val, Miguel Hipólito del, Gallur, Province of Zaragoza.—Olive oil.** 662  
**2095 La Linde, Baron of, Zaragoza.—Olive oil.** 662  
**2096 Bureta, Countess of, Alagon, Province of Zaragoza.—Olive oil.** 662  
**2097 Vallier, José, Zaragoza.—Olive oil.** 662  
**2098 Baerla, Mariano Perez, Zaragoza.—Olive oil.** 662  
**2099 Lopez y Pastor, Luis, Velilla de Ebro.—Olive oil.** 662  
**2100 Mendoza, Francisco Estéban, Zaragoza.—Olive oil.** 662  
**2101 Arpal, Manuel Vicente, Caspe, Province of Zaragoza.—Olive oil.** 662
- Textile Substances of Vegetable or Animal Origin.**  
**2102 Morand, Pedro, Hellin, Province of Albacete.—Esparto grass.** 666  
**2103 Bañon, Francisco Prast, Hellin, Province of Albacete.—Esparto grass.** 666  
**2104 Lopez, Benito, Hellin, Province of Albacete.—Esparto grass.** 666  
**2105 Guevara, Vicente Ladrom de, Tobarra, Province of Albacete.—Hemp.** 666  
**2106 Alvarez, Francisco Rodriguez, Province of Albacete.—Esparto grass.** 666  
**2107 Leon, Romualdo, Albacete.—Esparto grass.** 666  
**2108 Amores, Julian, Elche de la Sierra, Province of Albacete.—Hemp.** 666  
**2109 Parras, Enrique, Lietor, Province of Albacete.—Esparto grass.** 666  
**2110 Bushnell, Enrique, Hellin, Province of Albacete.—Esparto grass.** 666  
**2111 Lopez, José Beltran, Elche, Province of Albacete.—Hemp ropes.** 666  
**2112 Campoamor, Ramon de, Alicante.—Esparto grass.** 666  
**2113 Brotons Bros., Orihuela, Province of Alicante.—Hemp.** 666  
**2114 Lledo y Gomis, Vicente, Campello, Province of Alicante.—Twisted Esparto grass.** 666  
**2115 Sandoval, José Joaquin, Jacarilla, Province of Alicante.—Hemp.** 666  
**2116 Alhorque & Barkes, Alicante.—Esparto grass.** 666  
**2117 Beltran y Lopez, José, Elche, Province of Alicante.—Hemp.** 666  
**2118 Spencer & Roda, Enis, Province of Almeria.—Esparto grass.** 666  
**2119 Linares, Clemente, Albánchez, Province of Almeria.—Hemp.** 666

Textile Substances.

- 2120 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Flax and hemp. 666
- 2121 Trel, Miguel del, Berja, Province of Almeria.—Esparto grass. 666
- 2122 Calvache, Diego, Carboneras, Province of Almeria.—Palmetto leaves. 666
- 2123 Forestal District, Enis, Province of Almeria.—Esparto grass. 666
- 2124 Molina, Manuel Martinez, Oria, Province of Almeria.—Tow. 666
- 2125 Gonzalez, Manuel, Barco de Avila, Province of Almeria.—Flax. 666
- 2126 Garriga, Luis, Barcelona.—Rigging and cordage. 666
- 2127 Marques, Cavalit & Co., Hospitalet, Province of Barcelona.—Hemp thread. 666
- 2128 Provincial Commission, Province of Burgos.—Hemp and flax. 666
- 2129 Corporation of Briviesca, Province of Burgos.—Flax. 666
- 2130 La Cruz, Valentin de, Carrascalejo, Province of Cáceres.—Flax. 666
- 2131 Muñoz, José Diaz, Puerto de Santa Cruz, Province of Cáceres.—Flax. 666
- 2132 Sande, Olivares, Jeroñimo de, Garrovillas de Alconetar.—Cyperus. 666
- 2133 Riscal de Alegre, Marquis of, Alia, Province of Cáceres.—Nettle. 666
- 2134 Dabner, Guillermo H., La Laguna, Canary Islands.—Agave. 666
- 2135 Society of Friends of the Country, Las Palmas, Canary Islands.—Agave and ropes of agave. 666
- 2136 Provincial Board of Agriculture, Castellón.—Cordage of hemp, flax, and esparto grass. 666
- 2137 Safon, Antonio, Castellón.—Vegetable hair. 666
- 2138 Armengod, Joaquin, Castellón.—Hempen ropes. 666
- 2139 Aguila y Aguila, Santiago del, Villarrubia, Province of Ciudad-Real.—Hemp. 666
- 2140 Melgarejo, Maria Josefa, San Clemente, Province of Cuenca.—Esparto grass. 666
- 2141 Ribot, Esteban, & Bros., Granada.—Hemp, tow, and ropes. 666
- 2142 Salcedo, Antonio Puche, Guadix, Province of Granada.—Esparto grass. 666
- 2143 Corporation of Almonacid de Zorita, Province of Guadalajara.—Hemp. 666
- 2144 Castillo y Mesquita, Francisco del, Huelva.—Palmetto leaves, rush mats, ropes, and vegetable hair. 666
- 2145 Oliver, D., Huesca.—Esparto grass. 666
- 2146 Otal, José Maria, Huesca.—Esparto grass. 666
- 2147 Arnal, Dionisio, Castelflorite, Province of Huesca.—White esparto grass. 666
- 2148 Berrio y Torrero, Vicente, Beas de Segura, Province of Jaen.—Hemp and flax. 666
- 2149 Corporation of Huesco, Province of Jaen.—Esparto grass. 666
- 2150 Corporation of Cabra del Santo Cristo, Province of Jaen.—Esparto grass. 666
- 2151 Corporation of Congosto, Province of Leon.—Flax. 666
- 2152 Corporation of Vega de Infanzones, Province of Leon.—Flax. 666
- 2153 Corporation of Omaña, Province of Leon.—Flax. 666
- 2154 Corporation of Armunia, Province of Leon.—Flax. 666
- 2155 Corporation of Villaturiel, Province of Leon.—Flax. 666
- 2156 Corporation of Páramo del Sil, Province of Leon.—Flax. 666
- 2157 Corporation of Encinedo, Province of Leon.—Flax. 666
- 2158 Dorado, Manuel, Lancara, Province of Lugo.—Flax. 666
- 2159 Passiro, Bonifacia, Castroverde, Province of Lugo.—Flax. 666
- 2160 Corps of Engineers of Woods and Forests, Madrid.—Esparto grass. 666
- 2161 Diaz, Antonio, Málaga.—Objects made of hemp. 666
- 2162 Romero, Rafael Escalante, Teba, Province of Málaga.—Esparto ropes. 666
- 2163 Economical Society of Murcia.—Agave. 666
- 2164 Pulgar, Joaquin Perez del Caravaca, Province of Murcia.—Esparto grass. 666
- 2165 Gonzalez, Tomás Dacal, Freres, Province of Orense.—Flax. 666
- 2166 Rodriguez, Manuel Iglesias, Celanova, Province of Orense.—Flax. 666
- 2167 Romero y Romero, José, Guinzo de Limia, Province of Orense.—Flax. 666
- 2168 Calvo, Lorenzo, Salamanca.—Flax. 666
- 2169 Casado y Febrero, Francisco, Sevilla.—Hempen ropes. 666
- 2170 Igualada, Francisco, Sevilla.—Cordage and sandals of hemp. 666
- 2171 Monner, Juan, La Riera, Province of Tarragona.—Hemp. 666
- 2172 Batllé y Marca, Pedro, Province of Tarragona.—Ropes. 666
- 2173 Valencian Society of Agriculture, Valencia.—Esparto grass, hemp, nettle, and agave. 666
- 2174 Philadelphia Commission of Valencia.—Objects made of hemp. 666
- 2175 Villalba, Benigno, Corrales de Duero, Province of Valladolid.—Hemp. 666
- 2176 Borbujo, Juan, Benavente, Province of Zamora.—Flax. 666
- 2177 Marron, José Victor, Alcañices, Province of Zamora.—Flax. 666
- 2178 La Viñaza, Count of, Epila, Province of Zaragoza.—Flax and hemp. 666
- 2179 Loring Bros., Málaga.—Esparto grass. 666
- 2179a Corps of Engineers of Woods and Forests, Madrid.—Esparto grass. 666
- 2180 Robles, Vicente, Badajoz.—Pelt. 667
- 2181 Moreno, Cayetano, Villalba de los Barros, Province of Badajoz.—Merino wool. 667

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- 2183 Carrasco, Alfonso, Guareña, Province of Badajoz.—Merino wool. 667
- 2184 Espinosa, Fernando Montero de, Badajoz.—Merino wool. 667
- 2185 Patiño, José María, Cabeza de Vaca, Province of Badajoz.—Merino wool. 667
- 2186 Provincial Commission, Burjos.—Coarse and fine wool. 667
- 2187 Hernaliz, Francisco, Huerta de Abajo, Province of Burgos.—Merino wool. 667
- 2188 Agero, José Díaz, Moraleja, Province of Cáceres.—Wool. 667
- 2189 Santa Marta, Marquis of, Cáceres.—Wool. 667
- 2190 Montoya, Vicente Llopie, Bojas, Province of Castellón.—Wool. 667
- 2191 Guimera, Giner, Morella, Province of Castellón.—Wool. 667
- 2192 Provincial Board of Agriculture, Morella, Province of Castellón.—Wool. 667
- 2193 Valdeavellano, J. García, Espiel, Province of Córdoba.—Wool. 667
- 2194 Conde, Juan M., Córdoba.—Wool. 667
- 2195 Lozano, Juan Antonio, Belmez, Province of Córdoba.—Wool. 667
- 2196 Cortés y Velarde, Enrique, Fuente Ovejuna, Province of Córdoba.—Wool. 667
- 2197 Torrico, Manuel, Hinojosa, Province of Córdoba.—Wool. 667
- 2198 Yanis, Ambrosio, Cuenca.—Wool. 667
- 2199 Hernández, Pedro, Moguer, Province of Huelva.—Wool. 667
- 2200 Soldán, Antonio, La Palma, Province of Huelva.—Wool. 667
- 2201 Otal, José María, Almudevar, Province of Huelva.—Wool. 667
- 2202 Gimenez, Francisco, Jaén.—Wool. 667
- 2203 Freires, Manuel Soto, Panton, Province of Lago.—Wool? 667
- 2204 Cruz Gomez, Juan de la, Caravaca, Province of Murcia.—Shoddy. 667
- 2205 García y García, Manuel, Salamanca.—Wool. 667
- 2206 García, Mariano, Salvatierra de Tormes, Province of Salamanca.—Wool. 667
- 2207 Díaz, Cándido, Villaflores, Province of Salamanca.—Wool. 667
- 2208 Torroja, Ricardo, Zaratan, Province of Salamanca.—Wool. 667
- 2209 Cabrera, Victoriano, Cantalapiedra, Province of Salamanca.—Wool. 667
- 2210 Onís, Federico de, Cantalapiedra, Province of Salamanca.—Wool. 667
- 2211 Losoya, Marquis of, Segovia.—Wool. 667
- 2212 Tomé, Gabino, Segovia.—Wool. 667
- 2213 Quintanilla, Antonio, Carmona, Province of Sevilla.—Wool. 667
- 2214 Rosa, José de la, Villamanrique, Province of Sevilla.—Wool. 667
- 2215 Zayas y Trigueros, Miguel, Arhal, Province of Sevilla.—Wool. 667
- 2216 Vasquez, Juan, Sevilla.—Wool. 667
- 2217 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Wool. 667
- 2218 Gonzalez, Ramon, Quintana Redonda, Province of Soria.—Wool. 667
- 2219 Delgado, Manuel, Tejarejo, Province of Soria.—Wool. 667
- 2220 Romero, Angel, Soria.—Wool. 667
- 2221 Perez, Lino, Toledo.—Wool. 667
- 2222 Corporation of Medina del Campo, Province of Valladolid.—Wool. 667
- 2223 Salarich, Joaquin, Vich, Province of Barcelona.—Silk in the cocoon and reeled. 668
- 2224 Riscal de Alegre, Marquis of, Alia, Province of Cáceres.—Cocoons. 668
- 2225 La Viesca, Marquis of, Fregeneda, Province of Salamanca.—Spun silk. 668
- 2226 Paulino, Cipriano Perez, Fregeneda, Province of Salamanca.—Spun silk. 668
- 2227 Villalta y Uribe, Antonio, Jaén.—Cocoons. 668
- 2228 Gonzales, Pedro, Eutaimo, Province of Orense.—Cocoons. 668
- Machines, Implements, and Processes of Manufacture.**
- 2229 Albornoz, Juan Gil., Avila.—Plows. 670
- 2230 Cruz, Rafael Trianes de la, Huelva.—Models of harrows. 670
- 2231 Corps of Engineers of Woods and Forests, Madrid.—Manual implements. 670
- 2232 Philadelphia Commission of Valencia.—Agricultural instruments. 670
- 2233 Perez, Felipe, Habana, Cuba.—Cultivator. 670
- 2234 Serrano, Juan, Castellón.—Implements for tillage. 670
- Agricultural Engineering and Administration.**
- 2235 Barnosell, Pedro, Vallecas, Province of Madrid.—Guano. 681
- 2236 Provincial Deputation, Murcia.—Barrilla for fertilizing. 681
- 2237 Muñoz, Bruno, Pefiaranda, Province of Salamanca.—Girth. 682
- 2238 Provincial Commission of Valencia.—Harness appendages. 682
- 2239 Villar, Francisco Maria del, Barcelona.—Projects of rural constructions. 683
- 2240 Garriga, Francisco Domingo, Sas Quirse de Besora, Province of Barcelona.—Model of feeding-trough. 683
- 2241 Cruz, Rivero, Rafael Trianes de la, Huelva.—Plan of country house. 683
- Tillage and General Management.**
- 2242 Garriga, Francisco Domingo, Sas Quirse de Besora, Province of Barcelona.—Systems of rotation and calculations for agricultural products. 690
- 2243 Corps of Engineers of Woods and Forests, Madrid.—Plan of the special school, and technical designs made by the pupils; books on forestry, and models of implements used for the proper cultivation of forests. 690



## PORTUGAL.

(South of South Avenue, Columns 13 to 17.)

## Arboriculture and Forest Products.

## Arboriculture and Forest Products.

- 1 Menezes, Jose de Vasconcellos Carneiro, Marco de Canaveses, Oporto.—Woods, corkwood. 600
- 2 Archer, Jacintho F., Setubal, Lisbon.—Corks and corkwood. 600
- 2a Almeida, Jacintho Pacheco, Ponta Delgada.—Samples of wood. 600
- 3 Almeida, Antonio Joaquim de, Villa Nova de Ourem, Santarem.—Timber. 600
- 3a Bettencourt, Francisco, Ponta Delgada.—Samples of wood. 600
- 4 Administrative Council of Castro Daire, Castro Daire, Viseu.—Timber. 600
- 5 Administrative Council of Penacova, Penacova, Coimbra.—Corkwood. 600
- 6 Administrative Council of Penalva, Penalva, Viseu.—Timber. 600
- 6a Salles, Jose Joaquim Pereira, Miranda, Braganca.—Corkwood. 600
- 7 Albercaria, Thomas Antonio Pinto Soares, Villa Cha Averi.—Corkwood and oak bark. 600
- 8 Administrative Council of Vourella, Vourella, Viseu.—Timber. 600
- 9 Gago, Joao Henriques Nunes, Gaiaves, Portalegre.—Corkwood. 600
- 10 Goulao, Joao Pereira Pestana Pina, Niza, Portalegre.—Corkwood. 600
- 11 Vaz Preto, Gerales, Manuel Louza, Castello Branco.—Corkwood. 600
- 12 Joaquim Guilherme de Vascomellos & Sons, Elvas, Portalegre.—Corkwood. 600
- 13 Herdeiros de Roberto & Hunter Reynolds, Estremoz, Evora.—Corks. 600
- 14 Almeida, Francisco Aleas, Miranda do Douro, Braganca.—Corkwood. 600
- 15 Rebocha, Francisco Freire, Constancia, Santarem.—Timber. 600
- 16 Ventura, Jose Goncalves da Costa, Quinta do Mosteiro, Oporto.—Corkwood. 600
- 17 Agricultural Society of Oporto, Oporto.—Woods. 600
- 19 Fernandes, Joaquim, Mogao, Santarem.—Cork. 600
- 19a Castro, Joao Vaz, Pacheco, Ponta Delgada.—Samples of wood. 600
- 20 Queiros, Jose de Sequeira Pinto, S. Sebastiao do Duque, Vianna do Castello. a Corkwood and barks. 600  
b Walnuts and chestnuts. 605
- 21 Ramalho, Jose Maria, Evora.—Corkwood and corks. 600
- 22 Frausto, Antonio Joaquim, Montalvao, Portalegre.—Corkwood. 600
- 22a Rocha, Francisco Coelhoovda, Feira.—Corks. 600
- 23 Faria, Manuel Simplicio, Niza, Portalegre.—Corkwood. 600
- 24 Falcão, Joao Carlos da Costa, Fundao.—Chestnut staves, and rods for making hoops. 600
- 26 Guerra, Jose Manuel, Miranda do Douro, Braganca.—Corkwood. 600
- 27 Murta, Ramiro Cesar, Castello de Vide.—Corkwood. 600
- 28 Mesquita, Pedro Jose de, Sinde, Coimbra.—Corkwood. 600
- 29 Oriorio, Manuel de Arevedo Ferraz, Monforte, Castello Branco.—Corkwood. 600
- 30 Murteira, Joaquim Antonio, Campo Maior, Portalegre.—Timber. 600
- 31 Maria, Angelica, Montargil, Portalegre.—Corkwood. 600
- 32 Netto, Joao Mascarenhas, Silves, Faro.—Corks and corkwood. 600
- 33 Nunes & Co., Grandola, Lisbon.—Corks and corkwood. 600
- 34 Ratto, Antonio Gonsalves, Barquinha, Santarem.—Corkwood. 600
- 35 Souza, Jose Saldanha Oliveira e, Lisbon.—Corkwood. 600
- 36 Salgado, Julio Bivar d'Azevedo, Sardoal, Santarem.—Corkwood. 600
- 37 Souza, Pedro Augusto Pereira Abreu e, Santa Marinha, Villa Real.—Corkwood. 600
- 38 Lagrifa, Juan, Grandola, Lisbon.—Corks. 600
- 39 Lacerda, Jose de Aragao Costa, Aldea Nova do Cabo, Castello Branco.—Chestnut rods, staves. 600
- 40 Orb, J. Augusto de, Portalegre.—Corkwood. 600
- 41 Marcal, Joao Lopes, Evora.—Corkwood. 600
- 42 Peres, Roure, & Co., S. Thrago de Cacem, Lisbon.—Corkwood. 600
- 43 Margiochi, jr., Francisco Simoes, Lisbon.—Corkwood. 600
- 44 Ribeiro, J. Lopes, Ancias, Braganca.—Corkwood. 600
- 45 Ribeiro, Serafim Garcia, Oliveira do Hospital.—Corkwood. 600
- 46 Rodrigues, Manuel Antonio, Ferradosa, Braganca.—Corkwood. 600
- 47 Moraes, Antonio, S. Thago, Lisbon.—Corks and corkwood. 600
- 48 Mendonca, Manuel F. de, Lisbon.—Corkwood. 600
- 49 Rankin, William, & Sons, Almada, Lisbon.—Corkwood. 600
- 50 Ventura, Jose Goncalves da Costa, Quinta do Mosteiro, Oporto.—Corkwood. 600

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Arboriculture and Forest Products, Pomology.

- 51 Valente, Jose Justiniano d'Oliveira, Aveiro.—Pine kernels. 600
- 52 Vilarinho & Nephew, Silves, Faro.—Corks and corkwood. 600
- 53 Proenca, Francisco Tavares d'Almeida, Castello Branco.—Corkwood. 600
- 54 Silva, Antonio Jose de Sousa e Valongo, Oporto.—Cherry tree. 600
- 55 Peres, Joaquim Manuel de Mattos, Evora.—Corkwood. 600
- 56 Moreno, P., & Sons, Portalegre.—Corks and corkwood. 600
- 57 Cordeiro, Caetano Manuel, Evora.—Cork. 600
- 58 Meneses, C., & Co., Oporto.—Cork and manufactures. 600
- 59 Direction of the Works of the River Mondego and Figueira bar, Coimbra.—Timber woods and barks. 600
- 60 Ferreira, Manuel Felix, Villa Cha, Braganca.—Corkwood. 600
- 61 Vasconcellos, Catharina Mousinho Almada, Nisa, Portalegre.—Corkwood. 600
- 62 Vaz, Eduardo Augusto da Cruz, Castello Branco.—Corkwood. 600
- 63 Vargas, Antonio Alexandre, Alcaccer do Sal, Lisbon.—Corkwood. 600
- 64 Outeiro Fundao, Viscount of, Castello Branco.—Corkwood. 600
- 65 Vasconcellos Joaquim Guilherme de, Elvas, Portalegre.—Woods. 600
- 66 Saramago, Francisco Ferreira, Reguengo, Evora.—Corkwood. 600
- 67 Silva, Manuel Joaquim da, Redondo, Evora.—Oak-galls. 600
- 68 Andrade, Antonio Garcia de, Elvas, Portalegre.—Scarlet oak-bark and corkwood. 600
- 69 Almeida, Augusto de Azevedo Pinto de, Feira, Aveiro.—Corks. 600
- 70 Beca, Agostinho da Rocha, Penafiel, Porto.—Corkwood, pine tree, and oak-bark. 600
- 71 Coelho, Manuel Diogo, Castello de, Vide, Portalegre.—Timber. 600
- 72 Carreira, Jose Ivo, Peniche, Leiria.—Juniper-wood. 600
- 73 Calca e Pina, Antonio, Souzel, Portalegre.—Corkwood. 600
- 74 Robinson, George, Portalegre.—Corkwood. 600
- 75 Ramalho, Jose Maria, Evora.—Corkwood. 600
- 76 Salema Mattos, & Co., S. Thiaigo do Cacem.—Corks. 600
- 77 Pinheiro, Francisco Rodrigues, Marvao, Portalegre.—Corkwood. 600
- 78 Pereira, Francisco Jose.—Cork and corkwood. 600
- 79 Sousa, Antonio Joaquim, Lanudos, Oporto.—Corkwood. 600
- 80 Administrator of the Conselho of Mangualde, Mangualde, Viseu.—Timber. 600
- 81 Almeida, Joaquim Ribeiro, Campanha, Oporto.—Corkwood. 600
- 82 Camello, Joaquim Augusto da Silveira, Penafiel, Oporto.—Corks. 600
- 83 Board of Public Forests, Lisbon.—Shipbuilding timber and construction, corks and corkwood. 600
- 84 Carlos Brandao & Son, Oporto.—Corkwood and cork. 600
- 86 Casa Nova, Manuel Gonsalves, Beires, Oporto.—Corkwood. 600
- 87 Biester Campos, & Co., Lisbon.—Corkwood, prepared. 600
- 88 Zagallo, Antonio Carlos, Elvas, Portalegre.—Corkwood. 600
- 89 Machado, Joao Jose de Sousa, Pa-redes, Oporto.—Timber. 600
- 89a Costa Basto & Co., Oporto.—Mahogany woods. 600
- 90 Corte Real, Antonio Freire, Valle de Prazeres, Castello Branco.—Dyewood. 600
- 91 Cassola, Antonio Joaquim, Portalegre.—Oak tree and cork tree barks. 600
- 92 Veiga, Jose Mendes, Covilha, Castello Branco.—Wood dyes. 600
- 93 Nogueira, Henrique de Sa, Portalegre.—Cork tree bark, oak tree bark, middle layer. 600
- 94 Cardoso, Francisco de Paula, Alpedrinha, Castello Branco.—Sumac. 600
- 95 Chaves & Brother, Lisbon.—Saffron-flower. 600
- 96 Polares, Antonio Jose da Silva, Castanheda, Coimbra.—Pitch. 600
- 97 Gago, Joao Henriques Nunes, Galveas, Portalegre.—Acorns. 600
- 98 Saralva, Francisco Martins, Belmonte, Castello Branco.—Dried chestnuts. 600
- 99 Souza, Manuel Lopes de, Guarda.—Walnuts and chestnuts. 600
- 100 Silva, Joaquin Nunes da, Elvas, Portalegre.—Acorns. 600
- 101 Rego, Antonio Profrilio Gomes do, Covilha, Castello Branco.—Chestnuts. 600
- 102 Souto, Antonio Duarte da Cunha, Freixinho, Viseu.—Dried chestnuts. 600
- 103 Oliveira Soares, M. E. de, Evora.—Acorns. 600
- 104 Company of Lezirias do Tagus & Sado, Lisbon.—Corkwood. 600

## Pomology.

- 105 Martins, Jeronymo, & Son, Lisboa.—Nuts. 611
- 106 Margalhaes, Luis Antonio, Alda, Nova do Cabo, Castello Branco.—Chestnuts. 611
- 107 Morao, Maria Emilia d'Almeida, Penamacor, Castello Branco.—Olives. 611
- 108 Mesquita, Pedro Jose de, Sinde, Coimbra.—Dried chestnuts. 611
- 109 Pereira, Pedro Maria Dantas, Torres Vedras, Santarem.—Almonds. 611
- 110 Pinto, Clemencia, Villa Boim, Portalegre.—Acorns. 611
- 111 Oliveira, Verissimo Ferreira A. de, Montalvao, Santarem.—Olives. 611
- 112 Pessoa, Luis Manuel da Costa, Alfandega da Fé, Braganca.—Olives. 611
- 113 Ornelas & Lister, Lisbon.—Olives. 611

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

Pomology.

- 114 Botilheiro, Jose Fernandes, Mar-  
vao, Portalegre.—Walnuts. 611
- 115 Burguete, Miguel Serrao, Sardoal,  
Santarem.—Walnuts and hazelnuts. 611
- 116 Silveira, Manuel Jose da, Arganil,  
Coimbra.—Walnuts. 611
- 117 Costa, Joao Carlos, Elvas, Porta-  
legre.—Acorns. 611
- 118 Peres, Joaquim Manuel de Mattos,  
Evora.—Acorns. 611
- 119 Santos, Ascencio Jose dos, Valenca,  
Vianna do Castelo.—Chestnuts, filberts,  
and almonds. 611
- 120 Pimenta, Jose Maria Dantas, Tor-  
res Novas, Santarem.—Walnuts and  
almonds. 611
- 121 Coelho, Manuel Diogo, Castello  
de Vide, Portalegre.—Walnuts and chest-  
nuts. 611
- 122 Figueira, Manuel Duarte, Castello  
Branco.—Olives. 611
- 123 Gomes, Francisco Antonio.—Mon-  
corvo, Braganca.—Olives. 611
- 124 Gomes, Francisco Antonio.—Ol-  
ives. 611
- 125 Garfias, M. J. de L., Villa Nova de,  
Portimao, Faro.—Almonds. 611
- 126 Guerra, Joaquim Jose da, Elvas,  
Portalegre.—Olives. 611
- 127 Guedes, Francisco Domingues,  
Castello Branco.—Olives. 611
- 127a Abrancalha Abrantes, Viscount  
da, Santarem.—Olives. 611
- 128 Grillo, Manuel Francisco, Ribeiro  
de Niza, Portalegre.—Walnuts and hazel-  
nuts. 611
- 130 Jose, Joaquim das, Neves & Sons,  
Lisbon.—Almonds. 611
- 132 Peixoto, Jose Nunes de Soura,  
Penafiel, Oporto.—Acorns. 611
- 133 Coelho, Jose Justino, Villa de Ta-  
mega, Villa Real.—Walnuts. 611
- 134 Correa, Joaquin, Penacova, Coim-  
bra.—Walnuts. 611
- 135 Meneses, Manuel Antonio Horta  
da Vilarica, Braganca.—Figs. 611
- 136 Castel Branco, Manuel de Barros,  
Portalegre.—Chestnuts. 611
- 137 Direction of Works of the River  
Mondego and the Figueira bar, Coimbra.  
—Olives. 611
- 138 Transto, Leandro Pinto, Maraoa,  
Portalegre.—Walnuts and chestnuts. 611
- 139 Guerra, Jose da Conceicao, Elvas,  
Portalegre.—Grapes, olives. 611
- 140 Castro, Luis Bernardo Lampairo  
M., Amedo, Braganca.—Walnuts. 611
- 141 Coutinho, Luis C. de Lucena  
Araujo, Vilha da Fonte, Viseu.—Dried  
chestnuts. 611
- 142 Camara, Municipal of Penafiel,  
Penafiel, Oporto.—Walnuts, chestnuts,  
and filberts. 611
- 143 Coelho, Antonio Jose, Villela do  
Tamega, Villa Real.—Dried chestnuts.  
611
- 144 Campos, Antonio Carlos de, Mon-  
corvo, Braganca.—Almonds. 611
- 145 Miranda, Joaquim Lobo de, Lagos,  
Faro.—Almonds. 611
- 146 Nunes, Guilhermes Francisco Pe-  
reira, Oliveira do Hospital, Coimbra.—  
Olives. 611
- 147 Neves, Adelino, & Son, St. Antonio  
dos Olivais, Coimbra.—Filberts. 611
- 148 Lourinho, Antonio Jose, Monte Car-  
valho, Portalegre.—Walnuts, chestnuts,  
and hazelnuts. 611
- 149 Lanhoso, Jose, Regoa.—Walnuts  
and almonds. 611
- 150 Lecocq, Joao Jose, Castello de Vide,  
Portalegre.—Almonds and walnuts. 611
- 151 Lopes, Jose Martins Thomar, San-  
tarem.—Figs. 611
- 152 Lobo, Jose Maria, Guarda.—Wal-  
nuts. 611
- 153 Murteira, Manuel Maria, Campo  
Maior, Portalegre.—Olives. 611
- 154 Mattos, Manuel Antonio de, Cam-  
po Maior, Portalegre.—Olives. 611
- 155 Mendes, Casemiro Esteves, Aviz,  
Portalegre.—Walnuts. 611
- 156 Martel, Joaquin Triguerras, Pestana,  
Castello Branco.—Olives. 611
- 157 Martins, Antonio Joaquin da Silva,  
Elvas, Portalegre.—Olives. 611
- 158 Miranda, Manuel Patricio de, Po-  
voa de Meadas, Portalegre.—Olives. 611
- 159 Miranda, Antonio Augusto Lobo  
de, Lagos, Faro.—Almonds. 611
- 159a Ribas, Lima, Guarda.—Olives. 611
- 160 Mira, Jose Paulo de, Evora.—Ol-  
ives. 611
- 161 Nogueira, Henrique de Sa, Porta-  
legre.—Chestnuts. 611
- 162 Margarido, Luis Jose Ferreira, Vil-  
la Nova de Foscoa, Guarda.—Almonds  
611
- 163 Moraes, Antonio da Silva, Sardoal,  
Santarem.—Almonds. 611
- 164 Matta, Anacleto da Fonseca, Sar-  
doal, Santarem.—Chestnuts. 611
- 165 Vasconcellas, Manuel S., Quares-  
ma, Cardeisa, Coimbra.—Walnuts. 611
- 166 Veiga, Francisco Antonio, Goes,  
Coimbra.—Dried chestnuts. 611
- 167 Vinva, Jorge, & Sons, Pereiras,  
Santarem.—Almonds. 611
- 168 Visetto, Jose Bernardo, Tavira,  
Faro.—Almonds. 611
- 169 Veiga, Jose Mendes, Covilha, Cas-  
tello Branco.—Almonds. 611
- 170 Saramago, Francisco Ferreira,  
Reguengo, Evora.—Almonds. 611
- 171 Saraiva, Francisco Martins, Bel-  
monte, Castello Branco.—Leguminous  
fruits. 611
- 172 Antonio, Eduardo Montalvas de,  
Franca, Portalegre.—Acorns. 611
- 174 Inchado, Jose Antonio Dias,  
Mourao, Portalegre.—Walnuts. 611
- 176 Jara, Loulé, Faro.—Almonds. 611
- 177 Neves, Jose Joaquin dos, & Bros.,  
Lisbon.—Almonds. 611
- 178 Trincao, Romao Antunes, Lapas,  
Santarem.—Walnuts. 611
- 179 Tavares, Antonio Jose, Covilha  
Castello Branco.—Nuts, almonds, etc. 611
- 180 Trigo, Antonio Manuel de Sousa,  
Moncorvo, Braganca.—Almonds. 611

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Pomology, Agricultural Products.

- 181 Themuda, Engracia, Narcisca, Barellos.—Oranges. 611
- 182 Teixeira, Manuel Joaquin Xavier Eiro, Villa Real.—Dried chestnuts. 611
- 183 Taborda, Joao Manuel Correa Freixo Espada a' Cinta, Braganca.—Almonds. 611
- 184 Teixeira, Francisco Loureiro Campello, Oporto.—Chestnuts. 611
- 185 Manuel, Antonio, Mangual de, Viseu.—Walnuts and filberts. 611
- 186 Mello Faro, Joaquin Carvalho d'Azevedo Resende, Viseu.—Walnuts, filberts, almonds, and chestnuts. 611
- 187 Magalhaes, Antonio de Barros Sattam, Viseu.—Dried chestnuts. 611
- Agricultural Products.**
- 188 Baptista & Co., Lisbon.—Wheat. 620
- 189 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Husks, rye, and Indian corn. 620
- 190 Almeida, Antonio Mendes Alcacer do Sal, Lisbon.—Wheat. 620
- 191 Calisto & Dias, S. Thomé de Mira, Coimbra.—Rice. 620
- 192 Camara, Municipal of Penafiel, Penafiel, Oporto.—Grasses and serradella. 620
- 193 Souza, Jose d'Andrade e, Portalegre.—Indian corn. 620
- 194 Souza, Jose Saldanha Oliveira e.—Wheat and rye. 620
- 195 Santa Clara, Francisco de Paula, Elvas, Portalegre.—Wheat and barley. 620
- 196 Rosa, Jose da Graca Pereira, Niza, Portalegre.—Rye, Indian corn, and millet. 620
- 197 Reis, Antonio Nunes dos, Turcifal, Lisbon.—Wheat. 620
- 198 Rego, Antonio Profririo Gomes do, Covilha, Castello Branco.—Indian corn. 620
- 199 Ramos, Manuel Nogueira, Goea, Coimbra.—Wheat. 620
- 200 Almeida, Antonio Joaquim de, Villa Nova de Ourem, Santarem.—Indian corn. 620
- 201 Cruz, Joao Maria, Setubal, Lisbon.—Spartum. 620
- 202 Castro, Joao Lopes de, Montargil, Portalegre.—Wheat. 620
- 203 Corinho, Jose Maria, Montargil, Portalegre.—Indian corn and wheat. 620
- 204 Corado, Vicente Joaquim, Arronches, Portalegre.—Wheat. 620
- 205 Cunha Ozorio, Joaquim Felizardo da, Arronches, Portalegre.—Wheat. 620
- 206 Calca e Pina, Augusto, Souzel, Portalegre.—Wheat. 620
- 207 Cervantes, Pedro, Peniche, Leiria.—Orchilla weed. 620
- 208 Calca e Pina, Antonio, Souzel, Portalegre.—Cereals. 620
- 209 Pinto, Jose Clemente, St. Cruz, Coimbra.—Wheat. 620
- 210 Gago, Joao Henriques Nunes, Galveas, Portalegre.—Wheat and rice. 620
- 211 Antao, Manuel Antonio, Miranda do Douro, Braganca.—Wheat. 620
- 212 Araujo, Bernardo, Bretiande, Viseu.—Indian corn. 620
- 213 Almeida, Joaquim Ribeiro de, Campanha de Valxo, Oporto.—Indian corn. 620
- 214 Contada, Jose Domingues, Carapicos, Braga.—Indian corn. 620
- 215 Britto, Joao de, Lisbon.—Wheat. 620
- 216 Gouvea, Jose dos Santos, Constancia, Santarem. 620  
     a Cereals. 620  
     b Leguminous plants. 621
- 217 Mello e Faro, Joaquim Carvalho d'Azevedo, Resende, Viseu. 620  
     a Indian corn and wheat. 620  
     b Pannick grass. 624
- 218 Yosso, Joas Jose da Matta, Serpa, Beza. 620  
     a Oats. 620  
     b Chick-peas. 621
- 219 Tavares, Antonio Jose, Covilha, Castello Branco. 620  
     a Cereals. 620  
     b Leguminous fruits. 621
- 220 Teixeira, Carlos Augusto, Granda, Lisbon. 620  
     a Rice. 620  
     b Beans. 621
- 221 Guerreiro, Antonio Manuel, Villa Nova da Cerveira, Vianna do Castello. 620  
     a Wheat, rye, Indian corn. 620  
     b Beans. 621  
     c Linseed. 624
- 222 Gomes, Antonio Luis, Valença, Vianna do Castello. 620  
     a Indian corn. 620  
     b Beans. 621  
     c Linseed. 624
- 223 Miranda, Antonio Augusto Lobo de, Lagos, Faro. 620  
     a Indian corn and wheat. 620  
     b Peas, carob beans, lupines. 621  
     c Linseed. 624
- 224 Magalhaes, Luis Antonio, Aldea Nova do Cabo, Castello Branco. 620  
     a Rye. 620  
     b Beans, kidney beans. 621  
     c Potatoes. 622
- 225 Raposo, Luis, Miranda do Douro, Braganca.—Rye. 620
- 226 Ribeiro, Jose Rodrigues, Miranda do Douro, Braganca.—Barley. 620
- 227 Rua, Manuel Ribeiro, Magueija, Viseu.—Wheat. 620
- 228 Rosette, Jose, Palancoulo, Braganca.—Wheat. 620
- 229 Velho, Jose Bernardino Bringel, Beja.—Wheat. 620
- 230 Vieira, Francisco de Lemos Cunha, Evora.—Wheat, rye, and barley. 620
- 231 Machado, Pedro Xavier, Portalegre.—Wheat and rye. 620
- 232 Moraes, Jose Basilio de, Arronches, Portalegre.—Wheat. 620
- 233 Murteira, Antonio Maria, Campo Maior, Portalegre.—Wheat. 620
- 234 Lobao Francisco Rasquilha, Jr., S. Bartholomeo, Portalegre.—Wheat and rye. 620

Agricultural Products.

- 235 Lobo, Jose Maria, Guarda.—Trefoil,  
ray-grass. 620
- 236 Lemos, Francisco Antonio Pereira,  
Villarelhos, Braganca.—Wheat. 620
- 237 Neves, Francisco Xavier, Azi-  
nhoza, Braganca.—Wheat. 620
- 238 Nogueira, Manuel Martins, Gocs,  
Coimbra.—Indian corn. 620
- 239 Nunes, Guilherme Francisco Pe-  
reira, Oliveira do Hospital, Coimbra.—  
Wheat. 620
- 240 Pera, Francisco Marcos, Miranda  
do Douro, Braganca.—Wheat. 620
- 241 Lopes, Jacintho, Elvas, Portalegre.  
—Wheat. 620
- 242 Lima, Antonio Joaquim Fernandes,  
Villa Nova da Cerveira, Vianna do Cas-  
tello.—Wheat and Indian corn. 620
- 243 Lemos, Joao Gonsalves de, Louza,  
Coimbra.—Indian corn. 620
- 244 Mechanical Bakery of the Poor-  
house, Lisbon.—Wheat. 620
- 245 Pessoa, Antonio Jose dos Reis, S.  
Bartholomeo, Coimbra.—Indian corn and  
wheat. 620
- 246 Pinheiro, Jose Henrique, Sta. Ma-  
ria, Braganca.—Wheat. 620
- 247 Pinto, Jose, Penude, Viseu.—In-  
dian corn. 620
- 248 Pinto, Joao de Azevedo, Campello,  
Oporto.—Indian corn. 620
- 249 Pamperio, Ricardo de Souza, Val-  
longo, Oporto.—Cereals. 620
- 250 Margalhaes, Francisco T., Sinde,  
Coimbra.—Indian corn. 620
- 251 Leite, Antonio Bernardo d'Oliveira,  
Cabeciras de Basto, Braga.—Indian corn  
and wheat. 620
- 252 Lobo, Bartholomeo Jose, Oliveira  
do Hospital, Coimbra.—Indian corn. 620
- 253 Madeira, Joaquim Anastasio, Mon-  
forte, Portalegre.—Wheat. 620
- 254 Mendes, Bernardo, Portalegre.—  
Indian corn. 620
- 255 Marmello, Jose, Portalegre.—In-  
dian corn. 620
- 256 Nunes, Antonio, Elvas, Portalegre.  
—Wheat. 620
- 257 Ortega, Maria Luisa, Miranda do  
Douro, Braganca.—Wheat. 620
- 258 Oliveira, Claudino Augusto Mo-  
corvo, Braganca.—Indian corn. 620
- 259 Valente, Antonio Joaquim, Torre  
do Cabedal, Portalegre.—Wheat. 620
- 260 Vargas, Antonio Alexandre, Alcacer  
do Sal, Lisbon.—Wheat. 620
- 261 Viscount of Alcacer do Sal, Alcacer  
do Sal, Lisbon.—Wheat. 620
- 262 Valdez, Antonio de Campos, Al-  
cacer do Sal, Lisbon.—Wheat and rice.  
620
- 263 Vasconcellos, Ezequiel Augusto de,  
Elvas, Portalegre.—Wheat. 620
- 264 Silva Carvalho, Jose Leonardo da,  
Vianna, Evora.—Wheat and barley. 620
- 265 Silva, Manuel Joaquim da, Redon-  
do, Evora.—Wheat. 620
- 266 Sardinha, Joao Maria da Silva,  
Monforte, Portalegre.—Wheat, rye, bar-  
ley, and oats. 620
- 267 Lacerda, Jose de Aragao Costa,  
Aldea Nova do Cabo, Castello Branco.—  
Trefoil. 620
- 268 Andrade, Adriano Pequito Seixas  
de, Gavião, Portalegre.—Rice. 620
- 269 Acciole, Joao da Fonseca, Portale-  
gre.—Oats. 620
- 271 Bastos, Manuel Jose Teixeira, S.  
Miguel de Refoyos, Braga.—Indian corn.  
620
- 272 Brandao, Francisco Antonio, Re-  
boreda, Vianna.—Indian corn. 620
- 273 Peres, Joaquim Manuel de Mattos,  
Evora.—Wheat. 620
- 274 Pimentel, Antonio Augusto de  
Morais, Castello Branco, Braganca.—  
Rye and wheat. 620
- 275 Pinto, Antonio Rodrigues, Coim-  
bra.—Cereals. 620
- 276 Silveira, Manuel Jose da, Arganil,  
Coimbra.—Indian corn. 620
- 277 Poiares, Antonio Jose Silva, Can-  
tanhede, Coimbra.—Indian corn, wheat,  
rice. 620
- 278 Silva, Antonio Lopes da, Balazar,  
Oporto.—Indian corn. 620
- 279 Penedo, Francisco Antonio, Beja.  
—Wheat. 620
- 280 Picao, Amaro Jose de Bastos,  
Aventosa, Portalegre.—Wheat. 620
- 281 Peireira, Henrique Augusto, Setu-  
bal, Lisbon.—Rice. 620
- 282 Pinto, Luis Marques, Elvas, Por-  
talegre.—Wheat. 620
- 283 Souza, Augusto Pereira d'Abreu,  
Sta. Marinha, Villa Real.—Indian corn.  
620
- 284 Souza, Victorino Alves, Oporto.—  
Wheat. 620
- 285 Silva, Joaquim Medas da, Ribeiro  
das Avestas, Porto.—Indian corn. 620
- 286 Lousa, Jose Luis Rodrigues, Ver-  
doojo, Vianna do Castello.—Indian corn  
and rye. 620
- 287 Salgueiro, Jose Avelino Affonso,  
Segandocs, Vianna do Castello.—Indian  
corn. 620
- 288 Salgueiro, Jose Avelino Affonso,  
Segandocs, Vianna Castello.—Indian corn,  
and rye. 620
- 289 Santos, Antonio Ferreira dos, Rio  
Tinto, Oporto.—Wheat and barley. 620
- 290 Carneiro, Jose Antonio, Sta. Eu-  
lalia, Portalegre.—Wheat and rye. 620
- 291 Coelho, Jose Fialho, Moura, Beja.  
—Wheat and barley. 620
- 292 Campanha das Lesirias do, Tejo e  
Sado, Lisbon.—Wheat and barley. 620
- 293 Pinheiro, Jose de Moura, Idanha a  
Nova, Castello Branco.—Wheat. 620
- 294 Queiros, Sebastiao Machado Botel-  
ho, S. Pedro, Villa Real.—Indian corn. 620
- 295 Ruivo, Joao Lopes, Vianna do Alem-  
tejo.—Wheat, rye, and barley. 620
- 296 Carvalho, Joao Antonio de, Porto  
de Moz, Leiria.—Wheat. 620
- 297 Chaves & Brother, Lisbon.—Wheat.  
620
- 298 Dornas, Luis Casemiro Pinto dos,  
Bigorne, Viseu.—Rye. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 72-14.

## Agricultural Products.

- 399 Diogo, Paulo Joao, Miranda do Douro, Bragança.—Rye. 620
- 300 Duro, Francisco dos Santos, Vianna do Alemtejo.—Wheat, barley, and maize. 620
- 301 Figueiredo, Augusto de Sa, Marques e, Barreiras, Viseu.—Wheat. 620
- 302 Freitas, Joao Alves Pinto de, S. Joao d'Óvil, Oporto.—Indian corn and wheat. 620
- 303 Ferreira, Joao Dias, Vallongo, Oporto.—Wheat and Indian corn. 620
- 304 Philippe, Jose Antonio, Cepoes, Viseu.—Indian corn. 620
- 305 Franco, Jose da Costa, Beja.—Wheat. 620
- 306 Franco, Eduardo, Fronteira, Portalegre.—Wheat. 620
- 307 Ferreira, Jose, Montargil, Portalegre.—Wheat. 620
- 308 Fonseca Santos, Antonio Germano da, Redondo, Evora.—Wheat. 620
- 309 Ferro, Martinho Luis, Beringel, Beja.—Wheat. 620
- 310 Fonseca, Francisco da Costa Ramos Pinto da, Fronteira.—Wheat. 620
- 311 Gomes, Jose da Costa, Balazar, Oporto.—Wheat. 620
- 312 Guimaraes, Jose Fernandes, Serpa, Beja.—Wheat. 620
- 313 Lapa, Joaquim Pereira, Sernacelho, Viseu.—Wheat and rye. 620
- 314 Lima, Lino, Anciaes, Bragança.—Rye and wheat. 620
- 315 Caetano, Joaquim Antonio, Montargil, Portalegre.—Indian corn. 620
- 316 Leao, Antonio Moreira, Guilhufe, Oporto.—Wheat and rye. 620
- 321 Moreira, Joao Baptista, Rates, Oporto.—Wheat. 620
- 322 Valente, Jose Justiniano d'Oliveira, Estarreja, Aveiro.—Barley and oats. 620
- 323 Trigo, Jose Antonio Horta da Villanica, Bragança.—Wheat. 620
- 324 Tavares, Jose da Costa Andrade, Alpedrinha, Castello Branco.—Wheat. 620
- 325 Vieira, Manuel Pinto da Silva, S. Thiago de Custodias, Oporto.—Wheat and barley. 620
- 326 Teixeira, Manuel Joaquim Xavier, Ciro, Villa Real.—Barley. 620
- 327 Teixeira, Francisco Loureiro, Campello, Oporto.—Wheat. 620
- 328 Xavier, Francisco de Paulo, Benavente, Santarem.—Wheat. 620
- 329 Monteiro, Jose de Sousa, Viseu.—Rye and Indian corn. 620
- 330 Manuel Luis, Gondivae, Oporto.—Indian corn. 620
- 331 Moutinho, Joaquim Thome, Rio Tinto, Oporto.—Indian corn and rye. 620
- 332 Mousa, Joao Carlos, Marques de, & Gomes, Francisco, S. Salvador, Aveiro.—Indian corn, wheat, rye, barley, and rice. 620
- 333 Martins, Anselmo Jose, Eiro, Villa Real.—Rye. 620
- 334 Mourao, Victorino Teixeira Correia, Lordello, Viseu.—Indian corn. 620
- 335 Macias, Francisco de Pera, Miranda do Douro, Bragança.—Wheat. 620
- 336 Mostardinha, Jose Marques, Oliveira, Aveiro.—Wheat. 620
- 337 Malta, Afonso Bernardino Ochoa, Bragança.—Wheat. 620
- 338 Mirandella, Pedro Aleixo de, Mirandella, Bragança.—Wheat. 620
- 339 Malheiro, Manuel Joao Barreiras, Viseu.—Indian corn. 620
- 340 Meneses, Jose de Vasconcellos Carneiro, Soalhaes, Mario de Canavezes.—Indian corn, wheat, barley, rye. 620
- 341 Magalhaes, Antonio de Barros, Sattam, Viseu.—Wheat. 620
- 342 Carvalho, Luis Candido, Valle Passos, Villa Real.  
a Indian corn and rye. 620  
b Beans. 621
- 343 Coelho, Luis Pires Sardoal, Santarem.  
a Cereals. 620  
b Chick-peas and kidney beans. 621
- 344 Correa, Joaquim, Penacova, Coimbra.  
a Indian corn, rye, wheat, and barley. 620  
b Beans and peas. 621
- 345 Carvalho, Joaquim Augusto da Silveira, Penafiel, Oporto.  
a Rice and maize. 620  
b Beans and peas. 621
- 346 Costa, Manuel Jorge da, Valongo, Oporto.  
a Barley. 620  
b Beans. 621
- 347 Barbosa, Manuel Carneiro, Valongo, Oporto.  
a Indian corn. 620  
b Beans. 621
- 348 Bastos, Pedro Jose da Silva, Miranda do Corvo, Coimbra.  
a Indian corn. 620  
b Beans. 621
- 349 Alvarrao, Joao do Bomsucesso, Elvas, Portalegre.  
a Canary-seed. 620  
b Chick-peas. 621
- 350 Alvim, Joao Cordoso de Souza, Alter do Chao, Portalegre.  
a Cereals. 620  
b Spices. 623  
c Linseed. 624
- 351 Beca, Agostinho da Rocha, Penafiel, Oporto.  
a Millet-seed. 620  
b Beans. 621
- 352 Callado Senior, Joao da Costa, Alter do Chao, Portalegre.  
a Wheat. 620  
b Chick-peas, kidney beans, and lupines. 621
- 353 Chichorro, Andre Guilherme, Monforte, Portalegre.—Wheat. 620
- 354 Almeida, Joaquim Ribeiro, Campanha, Oporto.  
a Indian corn. 620  
b Beans. 621
- 355 Administrative Council of Montemor o Velho, Coimbra.  
a Indian corn, wheat, and rice. 620  
b Beans and peas. 621

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Agricultural Products.

- 356 Administrative Council of Guimaraes, Braga.**—Wheat, rye, Indian corn, pannick. 620
- 357 Annes, Antonio Joaquim, Eiro, Villa Real.**  
 a Indian corn. 620  
 b Beans. 621
- 358 Administrative Council of Poirares, Poirares, Coimbra.**  
 a Lupines. 620  
 b Beans. 621
- 359 Araujo & Brother, Lisbon.**  
 a Rice flour. 620  
 b Leguminous flour. 621
- 360 Asevedo, Jose Rodrigues da, Benavente, Santarem.**  
 a Indian corn. 620  
 b Kidney beans and lentiles. 621
- 361 Pereira, Jose Agostinho Mancio, S. Thiago, Lisbon.**  
 a Rice. 620  
 b Kidney beans. 621
- 362 Silva, Antonio Jose de Sousa e, Vallongo, Oporto.**  
 a Wheat. 620  
 b Linseed. 624
- 363 Palmeiro, Xavier Rosado, Alter do Chao, Portalegre.**  
 a Barley, wheat, oats, rye, Indian corn. 620  
 b Beans. 621
- 364 Pinto da Fonseca, Francisco Ramos, Fronteira, Portalegre.**  
 a Wheat. 620  
 b Chick-peas. 621
- 365 Ribas, Simao, Guarda.**  
 a Wheat and Indian corn. 620  
 b Chick-peas, potatoes, onions, and garlic. 621
- 366 Silva, Antonio Jose da, Leca do Balio, Oporto.**  
 a Rye. 620  
 b Beans. 621
- 367 Bogalho, Joao Joaquim, Villa Boim.**  
 a Wheat. 620  
 b Beans. 621
- 368 Calca e Pina, Antonio, Soussel, Portalegre.**  
 a Cereals. 620  
 b Leguminous articles. 621
- 369 Coutto, Joaquim Lucio do, Elvas, Portalegre.**  
 a Wheat. 620  
 b Chick-peas. 621
- 370 Figueiredo, Jose Paulo Teixeira de, Matheus, Villa Real.**  
 a Indian corn. 620  
 b Potatoes. 622
- 371 Direction of Works of the River Mondego and the Figueira bar, Coimbra.**  
 a Indian corn, rye, and oats. 620  
 b Seeds. 624
- 372 Cordes, Balthazar, Barcarena, Lisbon.**  
 a Wheat. 620  
 b Beans. 621
- 373 Cardozo, Antonio Augusto Correa da Silva, Cellorico, Guarda.**  
 a Rye, wheat, and barley. 620  
 b Kidney beans, and chick-peas. 621
- 374 Gomes, Antonio Xavier Correa, Sattam, Viseu.**  
 a Pannick and rye. 620  
 b Beans. 621
- 375 Fernandes, Manuel Ignacio, Tellos, Villa Real.**  
 a Rye, Indian corn. 620  
 b Beans. 621
- 376 Fernandes, Antonio Vicente d'Almeida, Benavente, Santarem.**  
 a Indian corn. 620  
 b Kidney beans and chick-peas. 621
- 377 Formosinho, Jose Maria Gomes, Serpa, Beja.**  
 a Barley and rye. 620  
 b Beans. 621
- 378 Fragozo, S. Thiago, Lisbon.**  
 a Rice. 620  
 b Kidney beans. 621
- 379 Fernandes, Joaquim Philippe, Beja.**  
 a Wheat. 620  
 b Leguminous plants. 621
- 380 Fiuza, Domingos Antonio, Evora.**  
 a Wheat, rye, and barley. 620  
 b Beans. 621
- 381 Guerra, Joaquim Jose da, Elvas, Portalegre.**  
 a Wheat. 620  
 b Leguminous fruits. 622
- 382 Vaz Preto Geraldles, Manuel Louza, Castello Branco.**  
 a Wheat. 620  
 b Beans and peas. 621
- 383 Egreja, Manuel Antonio, Torroso, Oporto.**  
 a Indian corn. 620  
 b Beans. 621
- 384 Inchado, Jose Antonio Dias, Mourao, Portalegre.**  
 a Cereals. 620  
 b Kidney beans. 621
- 385 Marreco, Miguel Antunes, Miranda do Corvo, Coimbra.**  
 a Indian corn. 620  
 b Beans. 621
- 386 Leas, Manuel da Cunha, Sobreira, Oporto.**—Wheat, 620
- 387 Egreja, Jose Francisco de Serra, Novaes, Oporto.**  
 a Wheat and Indian corn. 620  
 b Beans. 621
- 390 Saraiva, Francisco Martins, Belmonte, Castello Branco.**  
 a Cereals. 620  
 b Onions. 621
- 391 Sobrinho, Rafael Baptista, Alvito, Beja.**  
 a Wheat. 620  
 b Beans. 621
- 392 Souza e Mello, Antonio Machado de, S. Sebastiao, Ponta Delgada.**  
 a Barley and corn. 620  
 b Kidney beans. 621
- 393 Souza, Manuel Lopes de, Guarda.**  
 a Cereals. 620  
 b Kidney beans and chick-peas. 621  
 c Potatoes. 622
- 394 Matto, Antonio Mendes de, Alpedrinha, Castello Branco.**  
 a Cereals. 620  
 b Leguminous fruits. 621
- 395 Vaz, Eduardo Augusto da Cruz, Castello Branco.**  
 a Wheat. 620  
 b Chickpeas and beans. 621
- 396 Vasella, Jose jr., Gomes, Serpa, Beja.**  
 a Wheat. 620  
 b Beans. 621

## Agricultural Products.

<b>397 Abrancalha, Viscount of, Abrantes, Santarem.</b>		<b>415 Rangel, Manuel de Souza, Guilhufe, Oporto.</b>	
a Wheat, barley, rice, Indian corn.	620	a Corn.	620
b Butter	651	b Beans.	621
<b>398 Boa, Viscount of, Vista, Beja.—Wheat.</b>	620	<b>416 Ribeiro, J. Lopes, Ancimes, Braganca.</b>	
<b>399 Villas, Manuel Pereira, Torroso, Oporto.</b>		a Corn.	620
a Barley, corn, wheat, Indian corn.	620	b Beans.	621
b Beans.	621	<b>417 Roquete, Jose Ferreira, Salvaterra, Santarem.</b>	
<b>400 Veiga, Francisco Antonio, Goes, Coimbra.</b>		a Cereals.	621
a Indian corn.	620	b Kidney beans.	621
b Beans.	621	<b>418 Rijo, Filippe de Jesus, Elvas, Portalegre.</b>	
<b>401 Valente, Jose Justiniano d'Oliveira, Estarreja, Aveiro.</b>		a Wheat.	620
a Oats and barley.	620	b Chick-peas.	621
b Seed.	624	<b>419 Risques, Augusto, Avis, Portalegre.</b>	
<b>402 Montoso, Andre de Brito Monforte, Portalegre.</b>		a Cereals.	620
a Indian corn.	620	b Beans.	621
b Beans.	621	c Potatoes.	622
<b>403 Mira, Jose Paula de, Evora.</b>		<b>420 Souza, Manuel Paulo de, Miranda do Douro, Braganca.</b>	
a Wheat, barley, Indian corn.	620	a Wheat and rye.	620
b Kidney-beans, lupines.	621	b Chick-peas.	621
<b>404 Novaes, Antonio Jose Cabecelras de Basto, Braga.</b>		<b>421 Sa, Antonio Alves do Conto e, Ger-munde, Oporto.</b>	
a Indian corn.	620	a Wheat and Indian corn.	620
b Beans.	621	b Beans.	621
<b>405 Oliveira, Manuel Rodrigues, Fraguas, Viseu.—Indian corn, wheat.</b>	620	<b>422 Souto, Antonio Duarte da Cunha, Freixinho, Viseu.</b>	
<b>406 Mendes, Luis Antonio Soares, Castello Branco.</b>		a Indian corn.	620
a Wheat.	620	b Beans.	621
b Chick-peas and kidney beans.	621	<b>423 Silva, Joaquim Ribeiro da, Valongo, Oporto.</b>	
<b>407 Moniz, Antonio Bernardino da Fonseca, Baracal, Guarda.</b>		a Wheat.	621
a Indian corn, rye, wheat.	620	b Beans.	621
b Kidney beans.	621	<b>424 Salgado, Julio Bivar d'Asavedo e, Sardoal, Santarem.</b>	
c Millet-seed.	624	a Cereals.	620
<b>408 Oliveira, Verissimo, Ferreira A. de, Montalvo, Santarem.</b>		b Beans.	621
a Cereals.	620	<b>425 Silva, Antonio Jose da, Salvaterra, Santarem.</b>	
b Beans.	621	a Wheat.	620
<b>409 Lacerda, Jose de Arago Costa, Aldea Nova do Cabo, Castello Branco.</b>		b Chick-peas.	621
a Indian corn, wheat.	620	<b>426 Silva, Joaquim Tavares da Cruz, Aldeia da Matta, Portalegre.</b>	
b Beans, chick-peas.	621	a Millet.	620
<b>410 Pedroza, Maria Jose Lopes, Lavos, Coimbra.</b>		b Beans.	621
a Cereals.	620	<b>427 Coelho, Luis Pires, Sardoal, Santarem.</b>	
b Beans, chick-peas, lupines.	621	a Cereals.	620
c Linseed.	624	b Chick-peas and kidney beans.	621
<b>411 Mourato, Mathias, Alpalhao, Portalegre.</b>		<b>428 Pimentel, Jose Reis, Castello de Vide, Portalegre.</b>	
a Cereals.	620	a Cereals.	620
b Kidney beans.	621	b Chick-peas.	621
<b>412 Viuva Marques &amp; Sons, Lisbon.</b>		<b>429 Coelho, Manuel Diogo, Castello de Vide, Portalegre.</b>	
a Indian corn and wheat.	620	a Cereals.	620
b Beans.	621	b Beans.	621
<b>413 Morgado, Joao Alves, Constanca, Santarem.</b>		<b>430 Casqueiro, Jose Maria, Crato, Portalegre.</b>	
a Cereals.	620	a Cereals.	620
b Leguminous fruits.	621	b Beans.	621
<b>414 Queiroz, Jose de Sequeira Pinto, S. Sebastiao do Duque, Vianna do Castello.</b>		<b>431 Caldeira, Miguel Joaquim, Elvas, Portalegre.</b>	
a Cereals and husks.	620	a Wheat.	620
b Beans.	621	b Chick-peas.	621
c Seeds and pine kernels.	624	<b>432 Coutinho, Fernando Alfonso d'Almeida, Sepins, Coimbra.</b>	
		a Wheat and Indian corn.	620
		b Beans.	621

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.



## Agricultural Products.

- 433 Casa Nova, Manuel Gonsalves, Beires, Oporto.—Wheat, corn, Indian corn, barley. 620
- 434 Christina, Manuel Lopes, Alhaes, Viseu.—Wheat. 620
- 435 Carvalho, Luis Xavier do Amaral, Rio de Moinhos, Viseu.—Wheat and Indian corn. 620
- 436 Calcado, Antonio Jose, S. Pedro, Villa Real.—Indian corn. 620
- 437 Cadaval, Francisco de Sousa, Villa Nova da Cerveira, Vianna do Castelo.—Wheat and Indian corn. 620
- 438 Coelho, Antonio Jose, Villa do Tamega, Villa Real.—Rye. 620
- 439 Coelho, Joao dos Santos, Villa Nova de Souto de El Rei, Viseu.—Indian corn and wheat. 620
- 440 Azevedo, Joao Rodrigues de, Bena-vente, Santarem. 620  
a Wheat. 620  
b Chick-pea. 621
- 441 Peixoto, Jose Nunes de Sousa, Penafiel, Oporto. 620  
a Indian corn. 620  
b Vegetable seed. 624
- 442 Cadaval, Francisco de Sousa, Villa Nova da Cerveira, Vianna do Castelo.—Beans. 621
- 443 Corte Real, Antonio Freire, Valle de Prazeres, Castello Branco.—Kidney beans. 621
- 445 Abreu, Francisco Rodrigues de, Abrantes, Santarem.—Kidney beans. 621
- 446 Alcantara, Francisco Augusto Mendes de, Lagares, Coimbra.—Beans. 621
- 447 Alves, Jose Martins, Novaes, Oporto.—Beans. 621
- 448 Administrative Council of Coimbra.—Leguminous fruits. 621
- 449 Grillo, Manuel Francisco, Ribeiro de Niza, Portalegre. 621  
a Kidney beans. 621  
b Potatoes. 622
- 450 Ramires, Jose Peres, S. Thiago, Lisbon. 621  
a Kidney beans. 621  
b Linseed. 624
- 451 Leao, Jose Maria Carneiro, Figueira, Oporto. 620  
a Pannick grass. 620  
b Beans. 621  
c Millet-seed. 624
- 452 Veiga, Jose Mendes, Covilha, Castello Branco. 621  
a Pumpkins, leguminous fruits, and potatoes. 621  
b Seeds. 624
- 453 Rosa de Jesus, Maria Angelica, Porto.—Turnips, radishes, etc. 621
- 454 Monteiro, Julio Pereira, Villa Fernando, Guarda.—Potatoes. 622
- 455 Vasconcellos, Duarte, Loureiro, Viseu.—Hops. 623
- 456 Alvim, Joao Cardoso de Souza, Alter do Chao, Portalegre.—Mustard. 623
- 457 Calcada, Antonio da Costa, S. Pedro, Villa Real.—Beans. 621
- 458 Castro, Miguel Osorio, Cabral de Santa Clara, Coimbra.—Beans and peas. 621
- 459 Carvalho, Antonio Jose de, Elvas, Portalegre.—Chick-pea. 621
- 460 Coelho, Jose Justino, Villa do Tamega, Villa Real.—Beans and chick-peas. 621
- 461 Andrade, Francisco B. d'Almeida, Celorico Guarda. 621  
a French and other beans. 621  
b Potatoes. 622
- 462 Alvarrao, Joao de, Bom Successo, Elvas, Portalegre. 621  
a Chick-pea. 621  
b Canary-seed. 624
- 463 Pimenta, Isidoro E. O. C. Marques, Villa Boim, Portalegre.—Chick-peas and kidney beans. 621
- 464 Pygnatelli, Jose da Cunha, Guarda. 621  
a Kidney beans. 621  
b Linseed. 624
- 465 Freire, Joao Pereira, Penafiel, Oporto. 621  
a Beans. 621  
b Pine kernels and seeds. 624
- 466 Santos, Ascencio Jose dos, Valenca, Vianna do Castelo.—Beans and peas. 621
- 467 Pereira, Jose Geraldode Sa, Trancoso, Guarda.—Kidney beans. 621
- 468 Botilheiro, Jose Fernandes, Marvao, Portalegre.—Kidney beans. 621
- 469 Condessa d'Anadia, Santa Clara, Coimbra.—Beans. 621
- 470 Carvalho, Jose Fernandes Antunes de, Goes, Coimbra.—Beans. 621
- 471 Cruz, Jose Bento, Armamar, Viseu.—Bean. 621
- 472 Castro, Jose d'Almeida Siloa e, Miranda do Corvo, Coimbra.—Beans. 621
- 473 Costa, Antonio Ferreira da, Villa Cha de Cangueiros, Viseu. 621  
a Beans. 621  
b Potatoes. 622
- 474 Azevedo, Jose de, Alter do Chao, Portalegre.—Kidney beans. 621
- 475 Braga, Luiz Barbosa, Penafiel, Oporto.—Beans. 621
- 476 Barjona, Pedro Simoes Affonso, S. Thomé de Misa, Coimbra.—Beans. 621
- 477 Poiars, Antonio Jose da Silva, Cantanhede, Coimbra.—Beans. 621
- 478 Souza, Jose Luis Rodrigues de, Valenca, Vianna do Castelo.—Beans. 621
- 479 Silva, Antonio Jose de Sousa e, Vallongo, Oporto.—Beans and onions. 621
- 480 Pinto, Antonio Rodrigues, S. Bartholomeu, Coimbra.—Beans, chick-peas, and lupines. 621
- 481 Pinto, Luis Marques, Elvas, Portalegre.—Beans. 621
- 482 Pinto, Antonio Mascarade, Villa Boim, Portalegre.—Chick-peas. 621
- 483 Pinto, Augusto Leal de Gouvea, Miranda do Corvo, Coimbra.—Beans. 621
- 484 Mello, Bento de Castro Coelho e, S. Thiago, Coimbra.—Beans. 621
- 485 Martins, Joaquim, Boucas, Oporto.—Beans. 621
- 486 Joaquim Guilherme de Vasconcellos & Sons, Elvas, Portalegre.—Leguminous plants. 621

## Agricultural Products.

- 487 Jara, Loule, Faro.—Carob beans. 621
- 488 Guimaraes, Victorino Barbosa, Penafiel, Oporto.—Beans. 621
- 489 Gomes, J. Carlos, & Moura, F. A., Margues de, S. Salvador, Aveiro.—Peas, lupines, lentils. 621
- 490 Torres, Bernardo Jose, Novas, Oporto.—Garlic. 621
- 491 Tenorio, Matheus Rodrigues, Alter do Chao, Portalegre.—Kidney beans. 621
- 492 Gomes, Jose Libanio, Villa Nova de Portimao, Faro.—Carob. 621
- 493 Martins, Jeronymo, & Son, Lisbon.—Beans. 621
- 496 Moreira, Luis Jose, Lanudos, Oporto.—Beans. 621
- 497 Martins jr., Manuel Jose, Amorim, Oporto.—Beans. 621
- 498 Mattos, Manuel Henriques de, Goes, Coimbra.—Beans. 621
- 499 Moutinho, Joaquim Thomé, Gondomar, Oporto.—Beans. 621
- 500 Faro, Joaquim de Carvalho Azevedo, Reizende, Viseu.—Beans. 621
- 501 Fernandes, Jose Antonio, Valenca, Vianna do Castello.—Beans. 621
- 502 Ferreira, Joao Dias, Valongo, Oporto.—Beans. 621
- 503 Falcao, Maria Miquelina, Miranda do Corvo, Coimbra.—Beans. 621
- 504 Ferreira, Manuel da Costa, Marvao, Portalegre.—Kidney beans. 621
- 505 Fernandes, Joaquim Pinto, Camello, Oporto.—Beans. 621
- 506 Freire, Amancio Antonio de Sequeira, Alemquer, Lisbon.—Kidney beans. 621
- 507 Gomes, Joao Carlos, Ilhavo, Aveiro.—Beans. 621
- 508 Vieira, Venancio Dias de Figueiredo, Eiro, Aveiro.—Beans. 621
- 509 Visetto, Francisco Manuel, Tavira, Faro.—Carob. 621
- 510 Santos, Antonio Joaquin, Vianna.—Beans. 621
- 512 Soares, Jose B., Celorico, Guarda.—Kidney beans and chick-peas. 621
- 513 Sampaio, Alexandre Tavares de Mello, Guarda.—Kidney beans and chick-peas. 621
- 514 Silva, Jose Nunes da, Elvas, Portalegre.—Beans. 621
- 515 Dias, Luis Antonio, Miranda do Corvo, Coimbra.—Beans. 621
- 516 Meira, Matthias, Ribeira de Niza, Portalegre.—Kidney beans and chick-peas. 621
- 517 Neves, Adelino, Santo Antonio dos Olivares, Coimbra.—Beans. 621
- 518 Neves, Francisco Xavier, Asinhosa, Braganca.—Chick-peas. 621
- 519 Neves, Jose Marquesdas, Vallongo, Oporto.—Beans. 621
- 520 Negrão, Joaquim d'Almeida, Portimao, Faro.—Carob. 621
- 521 Oliveira, Fortunato Antonio, Goes, Coimbra.—Beans. 621
- 522 Ozorio, Alvaro de Azevedo, Tarouca, Viseu.—Beans. 621
- 523 Vasconcellos, Manuel S. Quaresma, Candeixa, Coimbra.—Chick-peas. 621
- 524 Magalhaes, Francisco F. Sinde, Coimbra.—Beans. 621
- 525 Pinto, Clemencia, Villa Boim, Portalegre.—Chick-peas. 621
- 526 Pimentel, Antonio Augusto de Moraes, Castello Branco, Braganca.—Chick-peas, lupines. 621
- 527 Martins, Anselmo Jose, Ciro, Villa Real.—Beans. 621
- 528 Lapa, Joaquim Pereira, Sernacelhe, Viseu.—Beans. 621
- 529 Leite, Antonio Bernardo d'Oliveira, Cabeceiras de Basto, Braga.—Beans. 621
- 530 Lessa, Antonio dos Santos, Boucas, Oporto.—Beans. 621
- 531 Monteiro, Francisco Vaz, Ponte de Sor, Portalegre.—Kidney beans. 621
- 532 Oliveira Soares, M. E. de, Evora. 620  
2 Cereal. 620  
3 Leguminous fruits. 621
- 533 Moran, Jose Antonio Martins, Vianna do Alemtejo.—Windsor beans. 621
- 534 Lemos, Joao Gonsalves de Souza, Coimbra.—Beans. 621
- 535 Ozorio, Manuel de Azevedo Ferrao, Monforte, Castello Branco.—Kidney beans. 621
- 536 Macedo Pinto, Joaquim Ferreira de, Taboaco, Viseu.—Beans. 621
- 537 Lopes, Jose Ramos, Airo, Braga.—Beans. 621
- 538 Mourao, Victorino F. C., Lordello, Villa Real.—Beans. 621
- 539 Motta, Abel Maria, Rabacal, Coimbra.—Chick-peas. 621
- 540 Lobo, Jose Maria, Guarda.—Kidney beans. 621
- 541 Lopes, Jacintho, Elvas, Portalegre.—Beans and chick-peas. 621
- 542 Miranda, Joaquim Lobo de, Lagos, Faro.—Beans. 621
- 543 Menezes, Jose Vasconcellos Carneiro, Marco de Canavezes, Oporto.—Beans. 621
- 544 Loureiro, Antonio Lopes, Amorim, Oporto.—Beans. 621
- 545 Leite, Joao Baptista de Araujo, Mirandella, Braganza.—Chick-peas. 621
- 546 Leite, Joaquim Maria Felgueiras, Mogadouro, Braganca.—Chick-peas. 621
- 547 Lima, Antonio Joaquim Fernandes, Villa Nova da Cerveira, Vianna do Castello.—Beans. 621
- 548 Macedo jr., Ventura Luis de, Lisbon.—Kidney beans, chick-peas. 621
- 549 Mattos, Manuel Antonio de, Campo Maior, Portalegre.—Chick-peas. 621
- 550 Mendes, Casemiro Esteves, Aviz, Portalegre.—Kidney beans. 621
- 551 Moreira, Domingos, jr., Boucas, Oporto.—Beans. 621
- 552 Maia, Manuel de Azevedo, Villa do Conde, Oporto.—Beans. 621
- 553 Maia, Jose Gomes, Amorim, Oporto.—Garlic. 621
- 555 Leitao, Alberto, Penacova, Coimbra.—Chick-peas and beans. 621

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

Agricultural, Animal, and Vegetable Products.

- 556 Salgado, Marianno Rosa, Lanudos, Oporto.—Beans. 621
- 557 Santos, Joaquim Ferreira, S. Martinho do Campo, Oporto.—Beans. 621
- 558 Souza, Pedro Augusto Pereira Abreu e, Santa Marinha, Villa Real.—Beans. 621
- 559 Rodrigues, Francisco Pedro, Grândola, Lisbon.—Beans. 621
- 560 Reis, Antonio Simoes dos, Condeixa, Coimbra.—Beans. 621
- 561 Rebello Valente & Allen, Oporto.—Beans. 621
- 562 Matta, Anacleto da Fonseca, Sardoal, Santarem.—Kidney beans. 621
- 563 Mendes, Raymundo Jose Soares, Abrantes, Santarem.—Chick-peas, kidney beans. 621
- 564 Guedes, Viscount de, Evora.—Beans. 621
- 565 Carreira, Jose Ivo, Peniche, Leiria.—Castor-oil beans. 621
- 566 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Beans. 621
- 567 Coelho, Jose Justino, Villa do Tamega, Villa Real.—Beans. 621
- 568 Carvalho, Luis Xavier do Amaral, Rio de Mounhos, Viseu.—Beans. 621
- 569 Seixas, Jose Maria Ayres de, Gaviao, Portalegre.—Beans. 621
- 570 Silva, Marcellino Ferreira da, Lisbon.—Chick-peas and kidney-beans. 621
- 571 Silva, Jeronymo Jose Alves da, Elvas, Portalegre.—Chick-peas. 621
- 572 Silva, Antonio Jose da, Boucas, Oporto.—Beans. 621
- 573 Factory of Tobacco, Lealdade, Oporto.—Cut leaf, cigars, cigarettes, and snuff. 623
- 574 Factory of Miguel Augusto da Silva Pereira, Oporto.—Tobacco. 621
- 575 Factory of Tobacco, Liberdade, Oporto.—Cut tobacco, cigars, and cigarettes. 623
- 576 Lisbon Tobacco Co., Lisbon.—Cigars and snuff. 623
- 578 Ferreira & Co., Lisbon.—Chocolate. 623
- 579 Vasconcellos, Duarte, Loureiro, Viseu.—Hops. 623
- 580 Cunha, Antonio Jose, Paredes de Coura, Vianna do Castello.—Millet seed. 624
- 581 Coutinho, Luis C. de Lucena, Araujo, Villa da Fonte, Viseu.—Millet seed. 624
- 582 Camello, Joaquim Augusto da Silveira, Penafiel, Oporto.—Seeds. 624
- 583 Administrative Council of Cantanhede, Coimbra.—Seeds. 624
- 584 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Grape seed. 624
- 585 Mesquita, Pedro Jose de, Sinda, Coimbra.—Linseed. 624
- 586 Margarido, Luis Jose Ferreira, Villa Nova de Foscoa, Guarda.—Sumach. 624
- 587 Alvim, Joao Cardoso de Souza, Alterido do Chao, Portalegre.—Linseed. 624

- 588 Sousa, Jose Luis Rodrigues, Verdugo, Vianna do Castello.—Linseed. 624
- 589 Castel-Branco, Manuel de Barros, Portalegre.—Acorus. 624
- 590 Fernandes, Joaquim Philippe, Beja.—Acorus and seeds. 624
- 591 Valente, Jose Justiniano d'Oliveira, Estarreja, Aveiro.—Seeds, pine kernels. 624
- 592 Guerreiro, Antonio Manuel, Villa Nova da Carneira, Vianna do Castello.—Linseed. 624

Marine Animals, Fish Culture, and Apparatus.

- 593 Neto, Manuel Jose Setubal, Lisbon.—Preserved fish. 641
- 594 Ornellas & Linder, Lisbon.—Preserved fish. 641
- 595 Fabrica Povoense, Povo de Varzim.—Preserved fish. 641
- 596 Freitas, Joao S., jr., Setubal, Lisbon.—Preserved sardines. 641
- 597 Direction of the Works of Mondego River and Figueira bar, Coimbra.—Preserved fish. 641
- 598 Romao, Joanna Balbina, Aveiro.—Preserved fishes. 641
- 599 Leite & Co., Francisco, Alcantarilha, Faro.—Salt tunny-fish. 642
- 599a Pilao e Luxas, A. d'O., e J. G. L., Ovar.—Models of fishing nets. 647
- 599b Oliveira, Gaspar Jose, Oporto.—Fishing nets. 647

Animal and Vegetable Products.

- 600 Gomes, J. Carlos, & Moura, F. A., Marques de S. Salvador, Aveiro.
- a Seaweeds. 650
- b Olive oils. 662
- 601 Queiroz, Jose de Sequeira Pinto, S. Sebastiao do Duque, Vianna do Castello.
- a Seaweeds. 650
- b Wine and brandy. 660
- 602 Morgado, Francisco Xavier Annes, Miranda do Douro, Braganca.—Cheese. 651
- 603 Formosinho, Jose Maria Gomes, Serpa, Beja.—Cheese. 651
- 604 Franco, Jose da Costa, Beja.—Cheese. 651
- 605 Coelho, Antonio, Gouvea, Guarda.—Cheese. 651
- 606 Lobo, Jose Maria, Guarda.—Cheese. 651
- 607 Saraiva, Francisco Martins, Belmonte, Castello Branco.—Cheese. 651
- 608 Sobrinho, Jose Guerreiro de L., Ferreira, Beja.—Cheese. 651
- 609 Callado, Joao da Costa, jr., Alter do Chao, Portalegre.—Cheese. 651
- 610 Pereira, Jose Francisco, Castello de Vide, Portalegre.—Cheese. 651
- 611 Penedo, Francisco Antonio, Beja.—Cheese. 651
- 612 Valladares, Pedro d'Ordaz, Castello Branco.
- a Cheese. 651
- b Olives. 656
- c Wine. 660
- d Olive oil. 662

## Animal and Vegetable Products.

<b>613 Viegas, Agostinho Thomas dos</b> Santos, Cea, Guarda.		
a Cheese.	651	
b White wine.	660	
c Olive oil.	662	
<b>614 Vicondeessa d'Oleiros, Castello</b> Branco.		
a Cheese.	651	
b Olives.	656	
c Olive oil.	662	
<b>615 Calca e Pina, Antonio, Sousel, Por-</b> talegre.		
a Cheese.	651	
b Honey.	654	
c Preserved meats.	656	
d Olive oil.	662	
<b>616 Pimentel, Jose Reis, Castello de</b> Vide, Portalegre.		
a Cheese.	651	
b Honey.	654	
<b>617 Aboim, Joao Cardoso de Souza, Al-</b> ter do Chao, Portalegre.		
a Cheese.	651	
b Preserved meats.	656	
c Wines and vinegar.	660	
<b>618 Abrunhosa, Joao Caetano de, Cas-</b> tello Branco.		
a Cheese.	651	
b Olives and preserved meat.	656	
c Olive oil.	662	
<b>619 Alvim, Joao Cardoso de Souza, Al-</b> ter do Chao, Portalegre.		
a Cheese.	651	
b Preserved meat.	656	
c Wine and vinegar.	660	
<b>621 Coelho, Manuel Diogo, Castello de</b> Vide, Portalegre.		
a Cheese.	651	
b Preserved meats and olives.	656	
<b>622 Alcantara, Francisco Augusto</b> Mendes de, Lagares, Coimbra.		
a Cheese.	651	
b Wine and brandy.	660	
<b>623 Cazal, Eliziario, Cea, Guarda.</b>		
a Cheese.	651	
b Red wine.	660	
c Vegetable oils.	662	
<b>623a Pimenta, Isidora, E. O. C. Mar-</b> gues, Villa Boim, Portalegre.		
a Cheese.	651	
b Honey.	654	
c Preserved meat.	656	
d Brandy.	660	
<b>624 Fernandes, Joaquim Filippe, Beja.</b>		
a Cheese.	651	
b Olive oil.	662	
<b>624a Boa, Viscount da, Vista, Beja.</b>		
a Cheese.	651	
b Olive oil.	652	
<b>625 Gago, Joao Henriques Nunes, Gal-</b> veas, Portalegre.		
a Cheese.	651	
b Olive oil.	662	
<b>626 Vaz Preto, Geraldcs, Manuel Lou-</b> sa, Castello Branco.		
a Cheese.	651	
b Honey.	654	
c Wine.	660	
d Olive oil.	662	
<b>627 Tenreiro, Manuel Guerra, Freixo</b> d'Espada à Cinta, Braganca.		
a Cheese.	651	
b Honey.	654	
c Olives.	656	
d Olive oil.	662	
<b>628 Taborda, Joao Manuel Correa, Frei-</b> xo d'Espada à Cinta, Braganca.		
a Cheese.	651	
b Olives.	656	
c Olive oil.	662	
<b>629 Goncalves, Jose Joaquim, Elvas,</b> Portalegre.		
a Cheese.	651	
b Honey.	654	
<b>630 Martel, Joaquim Trigueiros Pesta-</b> na, Castello Branco.		
a Cheese.	651	
b Olive oil.	662	
<b>631 Oliveira Soares, M. E. de, Evora.</b>		
a Cheese.	651	
b Honey.	654	
c Vinegar.	660	
d Olive oil.	662	
<b>632 Oliveira, Jose Miguel de, Moura,</b> Beja.		
a Cheese.	651	
b Preserved meat.	656	
<b>633 Lobo, Bartholomeo Jose, Oliveira</b> do Hospital, Coimbra.		
a Cheese.	651	
b Red wine.	660	
c Olive oil.	662	
<b>634 Veiga, Jose Mendes, Covilha, Cas-</b> tello Branco.		
a Cheese.	651	
b Dried fruits and olives.	656	
c Vinegar.	660	
d Olive oil.	662	
<b>635 Cavalleri, P., &amp; Co., Lisbon.</b>		
a Butter and cheese and milk.	651	
b Olives, gums, preserved meat and fruits.	656	
<b>636 Raposo, Joao, do Carmo, Moura.</b>		
a Cheese.	651	
b Olives.	656	
c Olive oil.	662	
<b>637 Pinto, Luis Marques, Elvas, Por-</b> talegre.		
a Cheese.	651	
b Preserved meat.	656	
<b>638 Pinto, Joaquim Pereira da Costa,</b> Sousel, Portalegre.		
a Cheese.	651	
b Olive oil.	662	
<b>639 Moraes, Rodrigo Antonio Leite de,</b> Oporto.—Hides.		652
<b>640 Viuva Chaves &amp; Son, Guimaraes.—</b> Leather and skins.		652
<b>641 Alcantara &amp; Bros., Joao Antonio,</b> Lisbon.—Leather and skins.		652
<b>642 Godinho, Francisco Ferreira, Cruz,</b> Quebrada.—Leather and skins.		652
<b>643 Jose Maria d'Andrade, &amp; Bros.,</b> Valenca.—Leather and calfskin.		652
<b>643a Ramos, Jose, &amp; Co., Lisbon.—</b> Belting and cables for machinery.		652
<b>644 Santos, Narciso Jose dos, Evora.—</b> Animal charcoal.		652
<b>645 Lamas &amp; Co., Jose, Lisbon.—</b> Leather.		652
<b>645a Ramos, Joaquim Antonio, Beja.—</b> Goatskins.		652
<b>646 Ferreira, Camillo P. da C., Oliveira</b> d'Azemeis.—Leather.		652
<b>647 Joao Antonio Alcantara &amp; Sons,</b> Lisbon.—Leather and skins.		652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 648 Gama, Antonio Domingos d'Oliveira, Oporto.—Hides. 652
- 649 Ferreira, Antonio Cyprianno, Lisbon.—Leather and skins. 652
- 650 Fernandes, Lucas, Macao, Santarem.—Skins. 652
- 651 Ferreira & Bro., Cascaes dos Gallegos, Santarem.—Kidskins. 652
- 652 Cassola, Antonio Joaquim, Portalegre.—Leather and skins. 652
- 653 President of the Municipal Chamber of Lisbon.—Tallow. 652
- 654 Jeronymo, Francisco Manuel, Coicas, Braganca.—Skins, hides. 652
- 655 Jose Maria d'Andrade & Bros., Valenca.—Leather, calfskin. 652
- 656 Oliveira, Custodio de, Adufe, Braga.—Glue. 652
- 657 Viuva, Machado, & Sons, Alcanena.—Hides. 652
- 658 Cerqueira, Lima, & Co., Vianna do Castelo.—Leather, hides, skins, and glue shavings. 652
- 659 Smidt, Joao Luis, Oporto.—Skins. 652
- 660 Martins, Andre, Sobrado, Oporto.—Wax. 654
- 661 Veira, Manuel, Melres, Oporto.—Honey. 654
- 661a Mello, Antonio Jose Teixeira, Lisbon.—Wax. 654
- 662 Tenorio, Matheus Rodrigues, Alter do Chao, Portalegre.—Honey. 654
- 662a Silva, Diogo Monteiro, Lisbon.—Manufactured wax. 654
- 663 Torregon, Antonio Joaquim, Redondo, Evora.—Honey. 654
- 664 Juzarte, Jose Francisco, Monforte, Portalegre.—Honey. 654
- 665 Garcia, Jose Camillo, Almodovar, Beja.—Wax. 654
- 666 Espada, J. C., Vallejo, Portalegre.—Honey. 654
- 670 Garcao, Jose Maria, Elvas, Portalegre.—Honey and wax. 654
- 671 Figueiredo, Joaquim de, Avis, Portalegre.—Honey. 654
- 672 Contreiras, Jose da Silva, Almodovar, Beja.—Honey-comb and honey. 654
- 673 Bussaco, Jose Rodrigues, Grandala, Lisbon.—Honey. 654
- 674 Boucinha, Manuel da Costa, Balthazar, Oporto.—Honey and honey-comb. 654
- 675 Braga, Joao Jose de Sousa, Oporto.—Honey. 654
- 676 Mello, Antonio Jose, Ferreira, Lisbon.—Honey and wax. 654
- 677 Moraes, Jose, Basilio de Arronches, Portalegre.—Honey. 654
- 678 Atten Rebello Volente, Oporto.  
a Honey. 654  
b Wines. 660  
c Olive oil. 662
- 679 Pessoa, Luis Manuel da Costa, Alfandega da Fé, Braganca.—Honey. 654
- 680 Loureiro, Bento Maria, Aldeia Nova, Beja.—Honey. 654
- 681 Saramago, Francisco Ferreira, Reguengo, Evora.—Honey. 654
- 682 Sena, Joao Pereira, Montargil, Portalegre.—Honey. 654
- 683 Vinva de Manuel, Pedro do, Alter do Chao, Portalegre.—Wax. 654
- 684 Vassallo, Jose Baptista, Alcanena, Santarem.—Bleached wax. 654
- 685 Vieira, Francisco de Semas, Cunha, Evora.—Honey. 654
- 686 Vieira, Jose Augusto, Evora Cidade, Evora.—Honey, white and yellow wax. 654
- 687 Miranda, Joaquin Antonio de Reguengo, Portalegre.—Honey and honey-comb. 654
- 688 Moreira, David Martins, Castello de Vide, Portalegre.—Bleached wax. 654
- 689 Moita, Jose Francisco, Aldeia Nova, Beja.—Honey. 654
- 690 Raposa, Vicente Narciso, Castello de Vide, Portalegre.—Honey. 654
- 691 Silva, Joao Miguel, Santa Eulalia, Portalegre.—Honey. 654
- 692 Costa da Mendiga, Jose da, Mendiga, Leisia.—Honey. 654
- 693 Santos, Luis Marcelino dos, Freiro, Braganca.—Honey. 654
- 694 Silva, Antonio Mendes da, Linhares, Braganca.—Honey. 654
- 695 Pereira, Jeronymo, Serpa, Beja.—Honey. 654
- 696 Pinheiro, Jose de Sousa Idanha a, Nova Castello, Braganca.—Honey. 654
- 697 Carvalho, Jose Fernandes Antonio de, Goes, Coimbra.—Honey. 654
- 698 Abreu, Jose Martins de, Aloens, Viseu.—Honey. 654
- 699 Albergaria, Thomas Antonio Pinto, Loasas, Villa Cha Averro.—Honey and wax. 654
- 700 Almeida, Francisco de Mattos, Penafiel, Porto.—Wax. 654
- 701 Adelino, Joao Manuel Joaquim, Elvas, Portalegre.—Honey. 654
- 702 Almida, Joaquin S. Momao, Castello de Vide, Portalegre.—Honey. 654
- 703 Perez, Roure, & Co., S. Thiago do Cacem, Lisbon.  
a Honey and wax. 654  
b Rice. 657  
c Wine. 660  
d Olive oil. 662
- 704 Lemos, Francisco Antonio Pereira, Villarelhos, Braganca.  
a Honey. 654  
b Red wine. 660
- 705 Falcao, Jeronymo Fernandes, Lamas, Coimbra.  
a Honey. 654  
b Wine. 660
- 706 Bello, Manuel Guel fao, Marcas, Santarem.  
a Honey. 654  
b Wines. 660  
c Olive oil. 662

## Animal and Vegetable Products.

<b>707 Pimentel, Antonio Augusto de Moraes, Castello Branco, Bragança.</b>			
a Honey.	654		
b Olives.	656		
c Olive oil.	66a		
<b>708 Baptista, Jose Antonio, Mirandella, Bragança.</b>			
a Honey.	654		
b Brandy.	660		
<b>709 Baptista, Jose Ignacio de Macedo, Mirandella, Bragança.</b>			
a Honey.	654		
b Brandy.	660		
<b>710 Allen Rebello Volente, Oporto.</b>			
a Honey.	654		
b Port and muscadine wine.	660		
c Olive oil.	66a		
<b>711 Administrador do Concelho de Poiãres, Poiãres, Coimbra.</b>			
a Wax.	654		
b Olive oil.	66a		
<b>712 Pinto, Clemencia, Villa Boim, Portalegre.</b>			
a Honey.	654		
b Brandy.	660		
<b>713 Andrade, Antonio Pequeto, Leiras de Gaviãs, Portalegre.</b>			
a Honey.	654		
b Dried grapes.	656		
<b>714 Calca e Pina, Augusto, Sourel, Portalegre.</b>			
a Honey.	654		
b Olive oil.	66a		
<b>715 Figueiredo, Jose Careira da, Sattam, Visen.</b>			
a Honey.	654		
b Wine.	660		
<b>716 Coelho, Jose Fialho, Mousa, Beja.</b>			
a Honey.	654		
b Preserved meat.	656		
<b>717 Fernandes, Manuel Ignacio, Tellos, Villa Real.</b>			
a Honey.	654		
b Dried chestnuts.	656		
<b>718 Fonseca Santos, Antonio Germano da, Redondo, Evora.</b>			
a Honey.	654		
b Vinegar.	660		
c Olive oil.	66a		
<b>719 Gouves, Jose dos Santos, Constança, Santarem.</b>			
a Honey.	654		
b Wine.	660		
<b>720 Fernandes, Jose Manuel, Redondo.</b>			
a Honey.	654		
b Vinegar.	660		
<b>721 Magalhães, Jose Joaquim de Silva, Villa Nova da Gaia, Oporto.</b>			
a Wax.	654		
b Olive oil.	66a		
<b>722 Tocha, Jose Rodrigues, Estremoz, Coova.</b>			
a Honey.	654		
b Olives.	656		
c Wine and vinegar.	660		
d Olive oil.	66a		
<b>723 Monte, Jose Manuel do, Redondo, Evora.</b>			
a Wax and honey.	654		
b Brandy and vinegar.	660		
c Olive oil.	66a		
<b>724 Nunes, Antonio Candido, Elvas, Portalegre.</b>			
a Honey.	654		
b Vinegar.	660		
<b>725 Miranda, Antonio Augusto Lobe de, Lagos, Faro.</b>			
a Honey.	654		
b Wine, brandy, vinegar.	660		
c Olive oil.	66a		
<b>726 Lemos, Antonio da Cunha d'Assvedo, S. Joao da Pesqueira, Viseu.</b>			
a Honey.	654		
b Wine and brandy.	660		
<b>727 Menezes, Jose de Vasconcellos, Canavezes, Porto.</b>			
a Honey.	654		
b Wine, vinegar.	660		
c Olive oil.	66a		
<b>728 Margiochi, Francisco, jr., Simoes, Lisbon.</b>			
a Honey.	654		
b Wine.	660		
c Olive oil.	66a		
<b>729 Marcal, Joao Lopes, Evora.</b>			
a Honey.	654		
b Olive oil.	66a		
<b>730 Pinto Basto, Augusto Ferreira, Oliveira do Bairro, Aveiro.</b>			
a Honey.	654		
b Olive oil.	66a		
<b>731 Silva, Joaquim Nunes da, Elvas, Portalegre.</b>			
a Honey.	654		
b Olive oil.	66a		
<b>732 Sobrinho, Rafael Baptista, Alvito, Beja.</b>			
a Honey.	654		
b Wines.	660		
<b>733 Vasconcellos, Catharina Mousinho Almadaminus, Nisa, Portalegre.</b>			
a Honey.	654		
b White wine.	660		
<b>734 Viscount of Guedes, Evora.</b>			
a Honey.	654		
b Wine.	660		
c Olive oil.	66a		
<b>735 Mattos, Manuel Antonio de, Campo Maior, Portalegre.</b>			
a Honey.	654		
b Dried grapes.	656		
c Brandy, wines, vinegar.	660		
d Olive oil.	66a		
<b>736 Mira, Jose Paulo da, Evora.</b>			
a Honey.	654		
b Vinegar.	660		
c Olive oil.	66a		
<b>737 Monteiro, Diego Lopes, Castello Branco.</b>			
a Honey.	654		
b Olive oil.	66a		
<b>738 Morgado, Joao Aloes, Constança, Santarem.</b>			
a Honey.	654		
b Brandy, red and white wine, vinegar.	660		
c Olive oil.	66a		
<b>739 Matta, Antonio Nunes, Grandola, Lisbon.</b>			
a Honey.	654		
b Wine.	660		
<b>740 Queimado, Isidoro Maria, Redondo, Evora.</b>			
a Honey.	654		
b Brandy, white wine, and vinegar.	660		
<b>741 Rosa, Jose da Graça Pereira, Nisa, Portalegre.</b>			
a Honey.	654		
b Preserved meat.	656		
c White wine, brandy, and vinegar.	660		
d Olive oil.	66a		

Animal and Vegetable Products.

- 742 Rosa, Joaquim Matheus Vieira, Villa Nova de Ourem, Santarem.  
a Honey. 654  
b Olive oil. 662
- 743 Rodrigues, Francisco Pedro, Granda, Lisbon.  
a Wax and honey. 654  
b Wine. 660  
c Olive oil. 662
- 744 Sa, Antonio Aloes do Conto e, Ger-munde, Oporto.  
a Honey. 654  
b Olive oil. 662
- 745 Santos, Joaquim Ferreira, S. Mar-tirho do Campo, Oporto.  
a Honey. 654  
b Wine. 660
- 746 Serra, Joaquim, Valle Formoso, Santarem.  
a Honey. 654  
b Olive oil. 662
- 747 Sa, Sabino Barros de, Pouco de Soudo, Santarem.  
a Honey. 654  
b Olive oil. 662
- 748 Santos, Ascencio Jose dos, Valenca, Vianna do Castello.  
a Wax. 654  
b Sweetmeats. 656  
c Wine. 660
- 749 Pereira, Joao M., Constanza, San-tarem.  
a Honey. 654  
b Olive oil. 662
- 750 Pedroso, Henrique Caldeira, Cas-tello Branco.  
a Honey. 654  
b Olives. 656  
c White wine. 660  
d Olive oil. 662
- 751 Bertao, Ladislau Xavier, Torrao, Beja.  
a Honey. 654  
b Olive oil. 662
- 752 Rosado, Joao Antonio Margues, Redondo, Evora.  
a Honey. 654  
b Red and white wine, and brandy. 660  
c Olive oil. 662
- 753 Rosado, Antonio Joaquim da Silva, Zambujeiro, Evora.  
a Honey. 654  
b Red wine. 660
- 754 Pinheiro, Candido Alberto A., Mon-axique, Faro.  
a Honey. 654  
b Olives. 656  
c Olive oil. 662
- 755 Mascarenhas, S., Faro.—Dried fruits. 656
- 756 Moura, Francisco Antonio Mar-gues, Ihavo, Aveiro.—Olives. 656
- 757 Menezes, Jose Correa, Lamego, Vi-seu.—Dried fruits. 656
- 758 Mattos, Maria do Livramento, Oporto.—Preserved fruit. 656
- 759 Maria do, Gloria, & Co., Oporto.—Preserved fruits. 656
- 760 Leal, Costa, & Co., Lisbon.—Pre-served meats, fish, and fruits. 656
- 761 Torres, Rodrigo Bravo, Novellas, Penafiel.—Olives and pickled pepper-pods. 656
- 762 Trigo, Antonio Manuel de Sousa, Moncorvo, Braganca.—Sweetmeats. 656
- 763 Themuda, Engracia Narcisa, Bar-cellos.—Sweetmeats. 656
- 764 Teixeira, Francisco de Sa, Salsedaa, Viseu.—Dried figs. 656
- 765 Victorino, Jose, Braganca.—Ham. 656
- 766 Varsca & Coelho, Oporto.—Pre-served meats, fish, olives, etc. 656
- 767 Tapadinha, Jose Joaquim, Portale-gre.—Preserved meats. 656
- 768 Trindade, Alfredo, Faro.—Figs. 656
- 769 Themudo, Jose Vicente, Castello de Vide, Portalegre.—Preserved meats. 656
- 771 Sanhoso, Jose Regoa.—Elder-berries, raisins, and dried figs. 656
- 773 Oliveira & Co., Jose Antonio de.—Preserved meats, fish, fruits, vegetables, and sweetmeats. 656
- 774 Jose Joaquim dos Neves & Sons, Lisbon.—Dried figs. 656
- 775 Lehmann, J. W., Gustav, Oporto.—Sweetmeats. 656
- 777 Guimaraes, Antonio, Faro.—Dried figs. 656
- 778 Gomes, Jose Libanio, Villa Nova de Portimao, Faro.—Dried figs. 656
- 779 Gouvea, Jose Bernardino d'Abren, Sande, Viseu.—Preserved fruits. 656
- 780 Rodrigues & Nephew, Fernando, Lisbon.—Preserved meat, vegetables, and fruits. 656
- 781 Franco, Joaquim, Portimao, Faro.—Dried figs. 656
- 782 Ferreira Convent, Ferreira d'Aves, Viseu.—Dried plums. 656
- 783 Dantas Pimenta, Jose Maria, Tor-res Novas, Santarem.—Dried fruit. 656
- 784 Castanheiro, Balthazar Rodrigues, Lisbon.—Sweet fruits. 656
- 785 Barros, Jose Xavier Pereira, Villa Real, Tras-os-Montes.—Sweetmeats. 656
- 786 Leitao, Alberto, Penacova, Coim-bra.—Dried damsons. 656
- 787 Pimenta, Anna Augusta de Souza, S. Joao de Lobjigos, Viseu.—Dried figs. 656
- 788 Ornellas & Lisher, Lisbon.—Pre-served fruits and vegetables, sweetmeats and fruits. 656
- 789 Le Cocq, Joao Jose, Castello de Vide, Portalegre.—Olives. 656
- 790 Silva, Domingos da, Elvas, Porta-legre.—Olives. 656
- 791 Valentim, Jose, Arraiolos, Evora.—Preserved meats. 656
- 792 Mendes, Augusto Alexandre Es-teves, Aviz, Portalegre.—Preserved meat. 656
- 793 Mascarenhas, Luis de, Portimao, Faro.—Dried figs. 656
- 794 Rodrigues, Antonio Manuel, Vin-haes, Braganca.—Sausages. 656
- 795 Romao, Joanna Balbina, Aveiro.—Sweetmeat. 656
- 796 Mello, Luis de Mendonca e, Tavra, Faro.—Dried figs. 656
- 797 Miranda, Joao Eduardo Lobo de, Faro.—Dried figs. 656

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 798 Roza, Julia Pimenta Cobral, Setubal, Lisbon.—Preserved orange. 656
- 799 Rijo, Joaquin Antonio, Elvas, Portalegre.—Olives. 656
- 800 Regallo, Jose Maria da Fonseca, Campo Maior, Portalegre.—Olives. 656
- 801 Serzedello, Joao Pereira, Elvas, Portalegre.—Preserved asparagus and olives. 656
- 802 Souza, Jose Saldanha Oliveira e.—Olives. 656
- 803 President of the Commission of Vianna, Vianna do Castelo.—Preserved fish. 656
- 804 Mina, S. Thome de, Coimbra.—Preserved fish. 656
- 805 Vidamrel, J. J. da, Trindade Dias, Coimbra.—Preserved fish. 656
- 806 Callisto, Manuel M. Pimentel, Coimbra.—Preserved fish. 659
- 807 Carvalho, Albino Justiniano, Condeixa, Coimbra.—Dried figs. 656
- 808 Campello, Evaristo Jose Ferraz de Moraes, Ancias, Braganca.—Raisins. 656
- 809 Carvalho, Antonio Miguel de, Sattam, Viseu.—Olives. 656
- 810 Correa, Antonio de Sousa, Oporto.—Olives. 656
- 811 Celas Convent, Santo Antonio do Olivaes.—Preserved fruits. 656
- 812 Carmo, Basilia Maria do, Arronches, Portalegre.—Preserved meat. 656
- 813 Conceicao, Joas Nunes da, Elvas, Portalegre.—Dried fruit, olives, and pickles. 656
- 814 Belem, Silvestre Polycarpo Correa, Lisbon.—Preserved fruits, preserved fish, and vegetables. 656
- 815 Campos, Luis Jose de, S. Pedro de Miraigaia, Oporto.—Olives. 656
- 816 Castro, Joaquim Caetano de, Oporto.—Hams. 656
- 817 Piteira, Fernandez Joaquim Filipe, Reguengo, Evora.—Pork meat. 656
- 818 Proenca, Vasconcellos, Faro.—Figs. 656
- 819 S. Bento d'Ave Maria Convent, Oporto.—Sweetmeat. 656
- 820 Semide Convent, Semide, Coimbra.—Preserved turnips. 656
- 821 Silva, Francisco Ferreira da, Oporto.—Sausages. 656
- 822 Sta. Clara Convent, Guimaraes.—Sweetmeats. 656
- 823 Souza, Conceicao Margues, Alves, Oporto.—Preserved fruits. 656
- 824 Sta. Rosa de Lima Convent, Guimaraes.—Preserved fruits. 656
- 825 Santa Clara Convent, Santa Clara, Coimbra.—Sweetmeat. 656
- 826 Rocha, Feliciano Antonio da, Setubal, Lisbon.—Preserved fish. 656
- 827 Passos, Jose Francisco Rodriguez, Fuzeta, Faro.—Dried figs. 656
- 828 Peixto, Augusto Gavia, Serpa, Beja.—Olives. 656
- 829 Botelho, Antonio C., Fayal, Azores.—Sausages. 656
- 830 Carvalho, Rosa Guilhermina de, Cancellia Velha, Porto.—Chocolate. 656
- 831 Cid, Jose Ignacio, Mirandella, Braganca.—Olives, murt. 656
- 832 Crus, Jose Bento, Armamamar, Viseu.—Honey. 656
- 833 Angelica, Rosa de Jesus Maria, Oporto.—Preserved fruits. 656
- 834 Barros, Rita Candida de, Castello de Vide, Portalegre.—Olives. 656
- 834a Pereira, Pedro Maria Dantas, Torres Vedras, Santarem.  
a Dried grapes. 656  
b Olive oil. 661
- 835 Larcher, Emilia Adelaide, Portalegre.  
a Preserved fruits. 656  
b Syrups of groseille. 659
- 836 Miranda, Joaquim, Lobo de, Lagoa, Faro.  
a Dried figs. 656  
b Red wine and vinegar. 660
- 837 Martins, Isidoro, Borba, Evora.  
a Dried fruits. 656  
b Wines. 660  
c Olive oil. 662
- 838 Negrão, Joaquim d'Almeida, Portimao, Faro.  
a Dried figs. 656  
b Wine. 660
- 839 Gallope, Fernando dos Santos, Portalegre.  
a Currant syrup. 656  
b Wine. 660
- 840 Bentes, Antonio Joaquim, Serpa, Beja.  
a Olives. 656  
b Olive oil. 662
- 841 Andrada, Antonia Garcia de, Elvas, Portalegre.  
a Preserved meat. 656  
b Olive oil. 662
- 842 Castello Branco, Joao da Silva, Ferraol, Santa Iria, Lisbon.  
a Pickles, preserved fruits, and sardines in oil. 656  
b Olive oil. 662
- 843 Cunha, Joaquim Guilherme da, Castello Branco.  
a Olives. 656  
b Wines. 661  
c Olive oil. 662
- 844 Castel-Branco, Antonio Mendo, Caldeira, Alter do Chao, Portalegre.  
a Preserved meat. 656  
b Vinegar. 661  
c Olive oil. 662
- 845 Atalya, Count of, Santarem.  
a Honey. 656  
b Wine. 660  
c Olive oil. 662
- 846 Guerra, Jose da Conceicao, Elvas, Portalegre.  
a Dried fruits. 656  
b Wine and liquor. 660
- 847 Theotónio, Joaquim Manuel, Serpa, Beja.  
a Olives. 656  
b White wine. 660  
c Olive oil. 662
- 848 Taborda, Antonio Theodoro Ferreira, Penamacor, Castello Branco.  
a Olives. 656  
b Red wine. 660  
c Olive oil. 662



## Animal and Vegetable Products.

- 849** Trinoao, Roman Antunes, Lapas, Santarem.  
 a Dried figs and grapes. 656  
 b Wines and brandy. 660
- 850** Administrative Council of Lausado, Lausado, Oporto.  
 a Sweet fruit. 656  
 b Red wine. 660
- 852** Almeida, Bernardo Caleiro de, Serpa, Beja.  
 a Olives. 656  
 b Olive oil. 662
- 853** Barboza, Paulo da Silva, Oporto.  
 a Sweetmeats. 656  
 b Biscuits. 661
- 854** Burguete, Miguel Serrao, Sardoal, Santarem.  
 a Olives, dried fruit. 656  
 b Vinegar. 660
- 855** Costa Falcão, Antonio Osorio d'Azevedo da, Alpedrinha, Castello Branco.  
 a Olives. 656  
 b White wine. 660  
 c Olive oil. 662
- 856** Figueiredo, Antonio Jose de, Carrazeda d'Ancias, Bragança.  
 a Olives. 656  
 b Wine. 660  
 c Olive oil. 662
- 857** Ferreira, Antonio Manuel, Torres Novas, Santarem.  
 a Dried fruits. 656  
 b Wine and brandy. 660
- 858** Faria, Jose Maria de la, Serpa, Beja.  
 a Olives. 656  
 b Wine and brandy. 660
- 859** Figueira, Gaspar Augusto, Evora.  
 a Sugared almonds. 656  
 b Wines and brandy. 660
- 860** Ferreira & Co., Lisbon.  
 a Candy. 656  
 b Syrup. 659  
 c Lemonade. 660
- 861** Martins, Jeronymo, & Son, Lisbon.  
 a Dried fruits. 656  
 b Wines. 660  
 c Olive oil. 662
- 862** Guedes, Francisco Domingues, Castello Branco.  
 a Sausages. 656  
 b Olive oil. 662
- 863** Magalhaes, Luis Antonio, Aldea Nova do Cabo, Castello Branco.—Timber, corkwood, sweet fruits.  
 a Dried fruits. 656  
 b Wine. 660  
 c Olive oil. 662
- 864** Mendes, Luis Antonio Soares, Castello Branco.  
 a Dried chestnuts. 656  
 b Vinegar. 660
- 865** Macedo Pinto, Joaquim Ferreira de, Toboaco, Viseu.  
 a Preserved fruits, elderberries. 656  
 b Wines. 660  
 c Olive oil. 662
- 866** Lemos, Antonio Maria Tovar de Moura, Beja.  
 a Olives. 656  
 b Vinegar. 660  
 c Olive oil. 662
- 867** Lacerda, Jose de Aragao Costa, Aldea Nova do Cabo, Castello Branco.  
 a Olives, potatoes. 656  
 b Wine, vinegar. 660
- 868** Nunes, Guilherme, Francisco Pereira, Oliveira do Hospital, Coimbra.  
 a Dried fruits. 656  
 b Wheat flour. 657  
 c White wine and vinegar. 660
- 869** Lima, Honorio Fiel, Portalegre.  
 a Preserved fruits. 656  
 b Wine. 660  
 c Olive oil. 662
- 870** Larcher Marcal, Maria Adejaide, Portalegre.  
 a Preserved fruits, truffles. 656  
 b Syrups. 659
- 871** Sousa, Manuel Alves de, Castello Branco.  
 a Olives. 656  
 b Olive oil. 662
- 872** Souza Pinto, Francisco de Gamboa, Castello Novo, Castello Branco.  
 a Olives. 656  
 b Olive oil. 662
- 873** Vaz, Eduardo Augusto da Cruz, Castello Branco.  
 a Preserved meat, olives. 656  
 b Red wine. 660  
 c Olive oil. 662
- 875** Santa Anna, Jose Candido de, Elvas.  
 a Olives. 656  
 b Olive oil. 662
- 876** Salgado, Julio Bivar d'Azevedo, Sardoal, Santarem.  
 a Dried pears. 656  
 b Wines. 660  
 c Olive oil. 662
- 877** Pinto, Francisco Xavier de Moraes, Mirandella, Bragança.  
 a Raisins. 656  
 b Red wine. 660
- 878** Perdigo, Miguel Salvado R., S. Miguel de Machede, Evora.  
 a Preserved fruit. 656  
 b Wine. 660
- 879** Pinto, Antonio Joaquim Nogueira, Villa Real.  
 a Red wine. 656  
 b Raisins. 660
- 880** Pires, Antonio Joaquim, Lisbon.  
 a Sweet fruits and meats. 656  
 b Liqueurs. 660
- 881** Ramos, Joao Joaquim, Redondo, Evora.  
 a Preserved grapes. 656  
 b Starch. 658  
 c Red and white wine, brandy. 660
- 882** Pimenta, Jose Maria Dantas, Torres Novas, Santarem.  
 a Dried figs. 656  
 b Wine and brandy. 660
- 883** Costa, Jose Rodrigues da, Penamacor, Castello Branco.  
 a Olives. 656  
 b Olive oil. 662
- 884** Antonio, Eduardo, Montalvao, Portalegre.  
 a Preserved meat and fruits. 656  
 b Olives and olive oil. 662
- 885** Teixeira, Francisco Loureiro, Campello, Oporto.—Wheat flour. 657
- 886** Veiga, Maria Christina de Napoles Figueiredo, Goes, Coimbra.—Potato flour. 657
- 887** Lopes, Alvaro Pereira de Bettencourt, Ponta Delgada.—Flour. 657
- 888** Lima, Lino, Ancias, Bragança.—Wheat and rye flour. 657

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 889 Leao, Antonio Moreira, Guilhufe, Oporto.—Wheat and rye flour. 657
- 890 Egreja, Manuel Antonio, Torroso, Oporto.—Corn flour. 657
- 891 Egreja, Jose Francisco de Serra, Novas, Oporto.—Wheat and corn flour. 657
- 892 Moreira, Joas Baptista, Rates, Oporto.—Wheat flour. 658
- 897 Gomes, Jose da Costa, Balasar, Oporto.—Wheat flour. 657
- 898 Ferreira, Januario da Silva, Elvas, Portalegre.—Corn flour. 657
- 899 Costa & Brother, Portalegre.—Corn flour. 657
- 901 Acacio Manuel Pereira, & Augusto Risques, Alter do Chao, Portalegre.—Corn, wheat, and rye flour. 657
- 902 Nunes, Vicente Ferreira, Lisbon, Lisbon.—Rice. 657
- 903 Pinto, Joao de Azevedo, Campello, Oporto.—Corn flour. 657
- 904 Villar, Manuel Pereira, Torroso, Oporto.—Barley flour. 657
- 905 Morero, Jose Joaquim, S. Thiago, Lisbon.—Rice. 657
- 906 President of the Municipality of Penafiel, Oporto.—Corn flour. 657
- 907 Costa, Antonio Ignacio da, Elvas, Portalegre.—Corn flour. 657
- 908 Silva, Antonio de Sousa e Vallongo, Oporto.—Corn flour. 657
- 909 Silva, Antonio Manuel, Vimioso, Braganca.—Wheat flour. 657
- 910 Souza, Victorino Alves, Oporto.—Wheat flour. 657
- 911 Pereira, Henrique Augusto, Setubal, Lisbon.—Wheat flour. 657
- 912 Pinto, Antonio Rodrigues, Coimbra.—Wheat flour. 657
- 913 Casa Nova, Manuel Gonsalves, Beires, Oporto.—Barley flour. 657
- 914 Carvalho, Jose Joaquim de, Ermida, Villa Real.—Wheat flour. 657
- 915 Pullido, Manuel, Marvao, Portalegre.—Wheat flour. 657
- 916 Silva, Antonio Lopes da, Balasar, Oporto.—Corn flour. 657
- 917 Conceicao, Jose dos Santos, Leca de Bailio, Oporto.—Indian corn flour. 657
- 918 Camara, Hermelinda Gago da, Ponta Delgada, Azores. 657  
a Potato flour. 657  
b Macaroni. 658
- 919 Camara, D. H. Gago da, Ponta Delgada, Azores. 657  
a Arrowroot flour, potato. 657  
b Macaroni. 658
- 920 Baptista & Co., Lisbon. 657  
a Wheat flour. 657  
b Macaroni. 658
- 921 Chaves & Brother, Lisbon. 657  
a Semolino. 657  
b Macaroni. 658
- 922 Pamperio, Ricardo de Souza, Vallongo, Oporto. 657  
a Wheat flour. 657  
b Biscuits. 658
- 923 Pamperio, Antonio di Souza Motta, Vallongo, Oporto. 657  
a Wheat flour. 657  
b Biscuits. 658
- 924 Alves & Bros., Lisbon.—Macaroni. 658
- 924a Mendonca, Thomas Antunes de, Lisbon.—Starch and rice powder. 658
- 925 Sobrinho, Felix Fernandes Terra, Oporto.—Macaroni. 658
- 926 Rodrigues, Jose Galhardo, Oporto.—Macaroni. 658
- 928 Lemos, Francisco Ferreira de, Oporto. 658  
a Macaroni. 658  
b Refined sugar. 659
- 929 Manso, Jose Marques, S. Bartholomeu, Coimbra.—Orgeat syrup. 659
- 930 Madeira Sugar Manufacturing Co., Funchal, Madeira. 659  
a Sugar. 659  
b Molasses brandy. 660
- 931 Silva, Francisco da, Chamusca, Santarem.—Red wine. 660
- 931a Nascimento, Manuel Antonio, Ponta Delgada.—Samples of liquors. 660
- 932 Amaral, Antonio da Costa Correa, Santa Comba Dao, Viseu.—Red wine. 660
- 933 Araujo, Joaquim Cardoso de, Oliveira de Bairro.—Red wine. 660
- 934 Affonso, Domingos, Arealva, Lisbon.—Wines and vinegar. 660
- 935 Almeida, Francisco Manuel de, Serpa, Beja.—White wine. 660
- 936 Aguilar, Jr., Bernardo Teixeira de, Lisbon.—Red and white wine. 660
- 938 Joao Bento, Valle Passos, Villa Real.—Red wine. 660
- 939 Allen, George, & Co., Lisbon.—Port wine. 660
- 940 Gama, Manuel Telles da, Lisboa.—Wines. 660
- 941 Hunt, Roope, Teage, & Co., Oporto.—Port wine. 660
- 942 Eca, Jose Ferreira de, Vallongo, Oporto.—Brandy. 660
- 942a Ramalho, Jose Maria, Evora. 660  
a Red wine. 660  
b Olive oil. 661
- 943 Fialho, Jacintho Maria, & Son, Ferreira, Beja.—Red wine. 660
- 944 Rodrigues Leitao, J. J., & Son, Funchal, Madeira.—Madeira wine and white grape juice. 660
- 945 Vasconcellos, Adelino d'Almeida, Nellas, Viseu.—White wine. 660
- 946 Freire, Bernardo Xavier, Guarda.—White wine. 660
- 947 Freire, Amancio Antonio da Saqueira, Alemquer, Lisbon.—Wine. 660
- 948 Gomes, Joao Carlos, Ilhavo, Aveiro.—Brandy. 660
- 949 Garcia, Antonio Joaquim, Samil, Braganca.—Wine. 660
- 951 Galvao, Jose Augusto Ferreira Peixoto, Montemor-o-Velho, Coimbra.—Brandy. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

Animal and Vegetable Products.

- 952 Guisado, Joao Baptista Ribeiro, Peniche, Leiria.—Wine and vinegar. 660
- 953 Galvao, Sabino Jose M. dos Anjos, Azuleira, Lisbon.—Wine. 660
- 954 Galhardo, Francisco Ferreira, Penamacor, Castello Branco.—Red wine. 660
- 955 Guedes, Antonio Pinto de Carvalho, Nogueira, Villa Real.—Red wine. 660
- 956 Iglecias, Manuel, Lisbon.—Wine. 660
- 957 Janes, Jose Alonso, Requengo, Evora.—Red wine. 660
- 958 Mello, Bento de Castro Coelho e, S. Thiago, Coimbra.—Red wine. 660
- 959 Monteiro, Manuel F., Portalegre.—Vinegar. 660
- 961 Esteves, Manuel de Miranda, Celorico, Guarda.—Red wine. 660
- 962 Infante, Joao Maria de Magalhães, Cantanhede, Coimbra.—White wine, brandy, and vinegar. 660
- 963 Esteves, Joao Manuel, Gondomil, Vianna do Castello.—Wine. 660
- 964 Kebe, E., & Co., Oporto.—Port wine. 660
- 965 Drach, Jose Ribeiro Guimarães, Abrantes, Santarem.—White wine. 660
- 966 Franqueira, Romao, Fontelonga, Braganca.—Brandy. 660
- 967 Ferro, Narcizo Telzeira Martins, Oporto.—Wine. 660
- 968 Ferreira & Dourado, Oporto.—Port wine. 660
- 969 Cabral, Paes F., & Sons, Sernache, Viseu.—Wine. 660
- 970 Ferreira, Antonia Adelaide, Godim, Villa Real.—Wine. 660
- 971 Fortes, Jose Maria, Santar, Viseu.—Wines. 660
- 972 Faria, M. A. P. Ramos, Colorico de Basto, Braganca.—Wine. 660
- 973 Freitas, Domingos Antonio de, Ameias, Coimbra.—Wine. 660
- 974 Fonseca, Joaquim Apolinario, Christello Couvo, Vianna de Castello.—Wine. 660
- 975 Ferreira, Jose Joaquim Gomes, Castanheiro, Braganca.—Wine. 660
- 976 Ferreira, Jose Mendes, Lamego, Viseu.—Wine. 660
- 977 Feijo, Anselmo Guilherme Borges, Godim, Villa Real.—Wine. 660
- 978 Ribas, Limas, Guarda.—White and red wines. 660
- 979 Fonseca, Bernardo da Silveira Pinto da, Varzea de Abrunhaes, Viseu.—Wine. 660
- 980 Fonseca, Themudo de Magalhães da, Lamego.—Wine. 660
- 981 Fragoso, Jose Maria, Chamusca, Santarem.—Wine. 660
- 982 Fialho, Francisco Antonio, Aldeia do Mato, Evora.—Red wine. 660
- 983 Figueiredo, Antonio Joaquim Marques, Villa Nova de Reguengo, Evora.—Red wine. 660
- 984 Falcao, Jose Maria Fernandez, Cadafais, Lisbon.—Wine. 660
- 985 Fonseca, Jose Maria da, Lisbon.—Wine and cognac. 660
- 986 Franco, Manuel Antunes, Cortegana, Lisbon.—Red wine. 660
- 987 Ferrari, Gustavo, Lisbon.—Wine. 660
- 988 Falcao, Francisco Paes de Mattos, Bríngel, Beja.—Wine and vinegar. 660
- 989 Ferreira, Joaquim Ignacio, Lisbon.—Wine. 660
- 990 Duarte, Julio Cesario Ferreira, Arcos, Aveiro.—Wine. 660
- 999 Dias, Jose da Fonseca, Oliveira do Bairro, Aveiro.—White wine. 660
- 1000 Deus, Joao Rodrigues de, Torres Novas, Santarem.—Wine. 660
- 1001 Dias, Daniel Jose Ferreira, Torres Novas, Santarem.—Wine. 660
- 1002 Duarte, Jose Baptista, Castello de Vide, Portalegre.—Wine. 660
- 1003 Doria, Jose, Beja.—Wine. 660
- 1004 Doria, E., Covilha, Castello Branco.—Wine. 660
- 1005 Dejante & Co., Bom Sucesso, Lisbon.—Wine. 660
- 1006 Coelho, jr., Antonio Ferraz, Caldas da Rainha, Leiria.—White wine. 660
- 1007 Cardoso, Manuel Pedro, Sobral de Monte Agraco, Lisbon.—Wine. 660
- 1008 Campos, Antonio Joaquim Potes, Evora.—Red wine. 660
- 1009 Castilho, Antonio de, Villa Soeiro, Guarda.—Red wine. 660
- 1010 Costa, Francisco, Collares, Lisbon.—Wine. 660
- 1011 Dias, Manuel Ignacio, Goes, Coimbra.—Vinegar. 660
- 1012 Duraes, Luis Antonio, Parada, Viseu.—Wine. 660
- 1013 Dow & Co., Oporto.—Port wine. 660
- 1014 Frexedas, Joao Felix de Faria, Castello de Vide, Portalegre.—Wine. 660
- 1015 Fernandes, Antonio Vicente d'Almeida, Benavente, Santarem.—Wines. 660
- 1016 Figueira, Jose Ricardo de Carvalho, Peniche, Leiria.—Wine. 660
- 1017 Fernandes, Joao Salvino d'Almeida, Benavente, Santarem.—Wine. 660
- 1018 Ferraz & Choque, Lisbon.—Wine. 660
- 1019 Faria, Simao Paes de, Torres Novas, Santarem.—Wine and brandy. 660
- 1020 Falcao, Joao de Souza, Alpiarca, Santarem.—Wine and brandy. 660
- 1021 Ferreira, Francisco de Souza, Rio Maior, Santarem.—White wine. 660
- 1022 Climaco, jr., Joao, Matacaes, Lisbon.—Red wine. 660
- 1023 Costa, Joao Victorino Pereira da, Torres Vedras, Lisbon.—White wine. 660
- 1024 Torre Novas, Count of, Lisbon.—Wine. 660
- 1025 Carneiro, Antonio Soares, Lagoa, Faro.—Red wine. 660
- 1026 Caldeira, Ricardo Jose, Alegrete, Portalegre.—Wine. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 1027 Camara, Jose Maria Figueiredo  
Cabral da, Otta, Lisbon.—Wine. 660
- 1028 Alcacovas, Count of, Paco d'Ar-  
cos, Lisbon.—Wine. 660
- 1029 Cunha, Gregorio da, Olhalvo,  
Lisbon.—Wine. 660
- 1030 Garcia, Pedro de Sousa, Estremoz,  
Evora.—Wine and brandy. 660
- 1031 Gomes, Jose.—Brandy. 660
- 1032 Guapo, Jose Daniel, Portalegre.—  
Wines. 660
- 1033 Godinho, Francisco, Reguengo,  
Evora.—Wines. 660
- 1034 Jansen, J. H., & Co., Lisbon.—  
Beer, and ginger beer. 660
- 1035 Kopke & Co., Massarelos, Oporto.—  
Wines. 660
- 1036 Rodrigues, J. J. Leitao, & Sons,  
Funchal, Madeira.—Madeira wine. 660
- 1037 Jacintho Maria Fialho & Son,  
Ferreira, Beja.—Red wine. 660
- 1039 Coelho, Luis Pires, Sardoal,  
Santarem.—Wine. 660
- 1040 Cortes, Benedicto, Celorico, Guar-  
da.—Red wine. 660
- 1041 Calleya, Cypriano Ribeiro, Lis-  
bon.—Wine. 660
- 1042 Costa, Agostinho N. d'Oliveira,  
Villa Franca de Xira, Lisbon.—Wine. 660
- 1043 Castello, Lucas da Silva Cardoso,  
Campo Grande, Lisbon.—Wine. 660
- 1044 Costa, Joao Cesario, Evora.—Red  
wine. 660
- 1045 Castello Branco, D. Joaquina  
Ferreira, Lisbon.—Wine. 660
- 1046 Carvalho, Jose Avelino N. de  
Carvalho, Torres Vedras, Lisbon.—Red  
wine. 660
- 1047 Brito, Augusto Pereira, Torres  
Novas, Santarem.—Red and white wine  
and brandy. 660
- 1048 Bexiga, Antonio Soares, Torres  
Novas, Santarem.—Brandy. 660
- 1049 Bivar, Jeronymo d'Almeida  
Coelho de, Portimao, Faro.—Red wine. 660
- 1050 Bivar, Jeronymo, Faro.—Red and  
white wine. 660
- 1051 Borges, Jose, Corroados, Santa-  
rem.—Red and white wine. 660
- 1052 Bello, Francisco Serrianno Car-  
vilho, Castello de Vide, Portalegre.—White  
and red wine. 660
- 1053 Baracho, Jose de Sousa, Torres  
Novas, Santarem.—Red wine. 660
- 1054 Cordes, Balthasar, Barcarena,  
Lisbon.—Red and white wine. 660
- 1055 Carvalho, Joaquim Freire de, Villa  
de Frades, Beja.—Red and white wine. 660
- 1056 Aragao, Francisco de Pina, Li-  
nhares, Guarda.—White and red wine. 660
- 1057 Abreu, Antonio de, Olhalvo, Lis-  
bon.—Wine. 660
- 1058 Abreu, Francisco Antonio Maximo,  
Azambuja.—Wine. 660
- 1059 Azevedo, Manuel Rodrigues de,  
Benavente, Lisbon.—Wine. 660
- 1060 Branco, Joao Vicente, Massa-  
rellos, Oporto.—Gin. 660
- 1061 Barros, Antonio Manuel Ferreira,  
Ucanha, Viseu.—Brandy. 660
- 1062 Barao de Nellas, Nellas, Viseu.  
—Wine. 660
- 1063 Borge, Francisco Maximino, Villa  
Nova de Ourem, Santarem.—Red and  
white wine. 660
- 1064 Batalhos, Jose dos, Prazeres,  
Cartaxo, Santarem.—Red and white wine.  
660
- 1065 Pereira, Manuel Augusto, Lisbon.  
—Red and white wine. 660
- 1066 Peixoto, Antonio Jose da Cunha  
A., Ohallo, Lisbon.—Wine. 660
- 1067 Rocha, Jose Alexandre da, Valle  
de Prazeres, Castello Branco.—Red  
wine. 660
- 1068 Pinheiro, Joaquim Garcia, Villa  
Nova, Reguengo, Evora.—Red wine. 660
- 1069 Prego, Ezequiel de Paula Sa,  
Alemquer, Lisbon.—White and red wine.  
660
- 1070 Afonso, Joao Hilario, Redonda,  
Evora.—Wine and brandy. 660
- 1072 Alvares, Sabastido, Borba, Evora.  
—Red wine. 660
- 1073 Azeveda, Manuel Rodrigues de,  
Bucellas, Lisbon.—White wine. 660
- 1074 Aasis, Domingos Francisco de,  
Alhandra, Lisbon.—Red wine. 660
- 1075 Barbosa, Manuel Paes Ferrao,  
Povoa de Midões, Coimbra.—Red wine.  
660
- 1076 Balsa, Miguel de Sousa, Sanfins,  
Villa Real.—Wine, muscadine wine. 660
- 1077 Ramalho, Esteves Goncalves,  
Villa Nova de Reguengo, Evora.—Red  
wine. 660
- 1078 Reixo, Jose Antonio Nunes, Vil-  
lacosa.—White wine. 660
- 1079 Silva & Cosens, Oporto.—Port  
wine. 660
- 1080 Soares, Antonio, Carraxede d'A-  
ciaes, Braganca.—Vinegar. 660
- 1081 Sousa, Bernardino Jose de Mello,  
Penafiel, Oporto.—Vinegar. 660
- 1082 Pimenta, Jose Maria, Dantas,  
Torres Novas.—Wine. 660
- 1083 Pereira, Candido Manuel, Lavra-  
dio, Lisbon.—Wine. 660
- 1084 Ramalho, Antonio Jose, Reguen-  
go, Evora.—White wine. 660
- 1085 Pinheiro, Jose, Azambuja, Lisboa.  
—Red and white wine. 660
- 1086 Ferreira, Jose Henriques, Lisboa.  
—Red wine. 660
- 1087 Frago, jr., Luis Antonio, Fer-  
reira, Cuba.—Wine. 660
- 1088 Figueira, Boaventura da Piedade,  
Cuba, Beja.—White wine. 660
- 1089 Fialho, Francisco d'Abreu, Porti-  
mao, Faro.—Red wine. 660
- 1090 Gonsalves, Jose dos Santos,  
Taboa, Coimbra.—Red wine. 660
- 1091 Frago, Manuel Figueira Souto  
Mayor, Vidigueira, Beja.—Wines. 660
- 1092 Guerra, Jose Ignacio Pinto, Mi-  
randa do Douro, Braganca.—Wine. 660
- 1093 Guerra, Francisco Aranches do  
Amaral, Coimbra.—Wine and vinegar.  
660

## Animal and Vegetable Products.

- 1094 Forá, Jose Augusto dos Santos, Figueira da Foz, Coimbra.—Wine. 660
- 1095 Faria, Francisca Albertina de, Rates, Oporto.—Wine. 660
- 1096 Fonseca, Manuel Coelho da, Oliveira do Hospital, Coimbra.—Wine. 660
- 1097 Fonseca, Francisco Maximo da, Soutello, Viseu.—Wine. 660
- 1098 Figueiredo, Manuel, Gonsalves, Aveiro.—Wine. 660
- 1099 Ferreira, Adriano Baptista, Vaccarica, Aveiro.—White wine. 660
- 1100 Freire, Joao Pereira, Penafiel, Oporto.—Wine. 660
- 1101 Falcão, Maria Miguelma, Miranda do Corvo, Coimbra.—Brandy. 660
- 1102 Bassoa, Jose Luis de, S. Momcède, Vianna do Castello.—Wine and brandy. 660
- 1103 Brandao, Francisco Antonio, Reboreda, Vianna.—White wine. 660
- 1104 Brito, J. F. L. Costa, Parada, Viseu.—White wine. 660
- 1105 Barreira, Antonio, Jr., Alfandega da Fe, Braganca.—Red wine. 660
- 1106 Boto, Joao de Sousa Dounas, Ervedosa, Viseu.—Red wine. 660
- 1107 Brandao, Augusto Ferreira, Vaccarica, Aveiro.—White wine. 660
- 1108 Bernardo Augusto Lopes & Co., Figueira da Foz, Coimbra.—Red wine. 660
- 1109 Barao do Calvario, Penafiel, Oporto.—Wines. 660
- 1110 Barao, Jose Correa de, Sabrosa, Villa Real.—Red wine. 660
- 1111 Lopes, Jacintho, Elvas, Portalegre.—Red and white wine. 660
- 1112 Lima, Carlos Joas Ribeiro, Melgaco, Vianna do Castello.—Wine. 660
- 1113 Lima, Joao Jose Xavier de, Vill' Alva, Beja.—White wine. 660
- 1114 Lisbao, Antonio da Silva, Penafiel, Oporto.—Wine. 660
- 1115 Laranja, Manuel Duarte, Coruche, Santarem.—White wine. 660
- 1116 Leite, Francisco de Paula, Alcacer do Sal, Lisbon.—Wines. 660
- 1117 Leal, Francisco da Costa, Arneiro, Lisbon.—Red wine. 660
- 1118 Oliveira Soares, Eduardo, Evora.—Red wine. 660
- 1119 Bintrago, Jose Carniero d'Almeida de, Tuscifal, Lisbon.—Red wine. 660
- 1120 Silva, Daniel Pereira da, Celorico, Guarda.—Wines. 660
- 1121 Silveira, Joao Vicente da, Abrigada, Lisbon.—Wines. 660
- 1122 Silva, Jose Gomes da, Collares, Lisbon.—Wine. 660
- 1123 Souza, Joao Candido de Castro e, Beja.—White wine. 660
- 1124 Souza, Jose Maximo Coelho J., Guarda.—Red wine. 660
- 1125 Silva, Antonio Martins da, Redondo, Evora.—Red wine. 660
- 1126 Sereto, Domingos Francisco, Villa Nova de Reguengos, Evora.—Red wine. 660
- 1127 Silva, A. Augusto da, Lisbon.—Wine. 660
- 1128 Salgado, Antonio Lopes Vidigal, Coruche, Santarem.—Red wine. 660
- 1129 Simoes, Francisco, Villa Soeiro, Guarda.—Red wine. 660
- 1130 Sa, Antonio Manuel da Cunha e, Torre de Ervedal, Leiria.—Wine. 660
- 1131 Souza, Joaquim da Silva, Ribeira de Baixo, Leiria.—Brandy. 660
- 1132 Silva, Francisco Jose de Bastos e, Torres Vedras, Lisbon.—Wines. 660
- 1133 Santos, Joao Bernardo dos, Lagoa, Faro.—Wine. 660
- 1134 Souza, Francisco Jose de, Labrugueira, Lisbon.—Red wine. 660
- 1135 Silva, Ernesto de Mendonca e, Abrigada, Lisbon.—Wines. 660
- 1136 Silva, Antonio Pires da, Villa Franca de Xira, Lisbon.—Wines. 660
- 1137 Osorio, Jose Augusto de Sa Pereira, Bretitade, Viseu.—Red wine. 660
- 1138 Osorio, Antonio Perfeito Pereira Pinto, Cambres, Viseu.—Wine. 660
- 1139 Oliveira, Domingos Carneiro de, Agrella, Porto.—Wine. 660
- 1140 Nunes, Jose Cabrita, Lagoa, Faro.—Red wine. 660
- 1141 Outeiro, Viscount of, Fundo, Castello Branco.—Red wine. 660
- 1142 Vasconcellos, Joaquim Guilherme de, Elvas, Portalegre.—Red and white wine. 660
- 1143 Silva, Francisco Candido da, Torres Novas.—Wine. 660
- 1144 Silveira, Joao Vicente da, Abrigada, Lisbon.—Wine. 660
- 1146 Vasconcellos, Antonio da, Villa Nova, Vidgueira, Beja.—White wine. 660
- 1147 Vilhena, Agostinho de, S. Thiago, Lisbon.—Red wine. 660
- 1148 Esperanca, Viscount of, Cuba, Beja.—Red and white wine and vinegar. 660
- 1149 Nogueira, Henrique de Sa, Portalegre.—Red wine. 660
- 1150 Nascimento, Manuel Antonio do, Ponta Delgada, Azores.—Liquors; brandy, cognac. 660
- 1151 Oliveira, Jose Bernardo de, Mondim de Basto, Villa Real.—Brandy. 660
- 1152 Oliveira, Antonio Simoes de, Moluido, Viseu.—Wine. 660
- 1153 Offey, Cramp, & Forrester, Oporto.—Wine. 660
- 1154 Vasconcellos, Adelino d'Almeida, Nellas, Viseu.—White wine. 660
- 1155 Serrado, Viscount of, Viseu.—Wine. 660
- 1156 Villafanha, Antonio de, Tondella, Viseu.—Red and white wine. 660
- 1157 Valle, Jose de Seixas do, Bassar, Viseu.—Wine. 660
- 1158 Veiga, Ricardo Antonio da, Povoa de Midos, Coimbra.—Red wine. 660
- 1159 S. Thome, Viscount of, Soure, Coimbra.—Red wine. 660
- 1160 Valle, Manuel de Sousa Diaz, Oporto.—Wine. 660
- 1161 Vieira, Venancio Dias de Figueiredo, Eiro, Aveiro.—Wine. 660

## Animal and Vegetable Products.

- 1162 Moidnenta da Beira, Viscount of, Viseu.—Red wine. 660
- 1163 Viuva Pinto, & Son, Lisbon.—Red and white wine. 660
- 1164 Viuva, Pevelin, & Sons, Torres Vedras, Lisbon.—Red and white wine. 660
- 1165 Welsh Brothers, Funchal, Madeira.—Madeira wines, grape juice, etc. 660
- 1166 Abrigada, Viscount of, Lisbon.—Muscateel and other wines. 660
- 1167 Mossamedes, Viscount of, Bemfica, Lisbon.—Wine. 660
- 1168 Carnide, Viscount of, Carnide, Lisboa.—Red and white wine. 660
- 1169 Velloso, Antonio Guedes, Cambrés, Setubal, Lisbon.—Red wine. 660
- 1170 Vilhena, Barbosa Arthur Peres de, Cartaxo, Guarda.—Red wine. 660
- 1171 Sagiosa, Viscountess of, Sagiosa, Guarda.—White wine. 660
- 1172 Nunes, Jose Jacintho, Grandola, Lisbon.—Wine. 660
- 1173 Nobre, Manuel de Barros, Tavora, Viseu.—Red wine. 660
- 1174 Neves, Fortunato Vieira das, Taboa, Coimbra.—White wine. 660
- 1175 Vas Freire, Jose Sebastiao Torres, Evora.—Red and white wine. 660
- 1176 Pereira, Widow Theotonio, & Sons, Lisbon.—White and red wine. 660
- 1177 Velho, Francisco da Rosa, Evora.—Red and white wine. 660
- 1178 Formosinho, Widow of Joao Martins, Lagoa, Faro.—Wine. 660
- 1179 Velles, Luis Nunes de, Portalegre.—Brandy. 660
- 1180 Judice, A. J., Widow of, Mexilhoeira, Faro.—Wine. 660
- 1181 Meneses, Jose Maria da Silveira, Borba.—White wine. 660
- 1182 Masziotti, Antonio Maria Dias P. Chaves, Collares, Lisbon.—White and red wine. 660
- 1183 Machado, Pedro Xavier, Portalegre.—White wine. 660
- 1184 Martins, Miguel Castro, Montargil, Portalegre.—Wines. 660
- 1185 Mattos, Bento F. M., Mondim de Basto, Villa Real.—Wine. 660
- 1186 Lisboa, Luis Emilio, Vieira.—Wine. 660
- 1187 Neves, Jose Eloy das, Cadaval, Lisbon.—White and red wine, and brandy. 660
- 1188 Natividade, Jose Gonzalves, Constanca, Santarem.—White wine. 660
- 1189 Lobo, Francisco Teixeira, Sabrosa, Villa Real.—Muscadine wine. 660
- 1190 Lima, Jose Duarte, Cartaxo, Santarem.—Red and white wine, brandy. 660
- 1191 Mello, Hygino Otto de Queiros, Lanico, Viseu.—Red wine. 660
- 1192 Lebre, Manuel Ferreira, Anadia, Aveiro.—Red wine. 660
- 1193 Lemos, Alexandre Maria de, Lamego, Viseu.—Red wine. 660
- 1194 Montes, Jose Nunes Moraes, Castello Branco.—Red wine. 660
- 1195 Martins, Benedicto Mathews, Elvas, Portalegre.—Wine. 660
- 1196 Macedo, Luis A. d'A. Estremoz, Evora.—Red wine. 660
- 1197 Macedo, Camillo de jr., Peso da Regoa, Villa Real.—Wines and brandy. 660
- 1198 Magalhaes, Luis Francisco da Silva, Vilarinho de S. Romao, Villa Real.—Red wine. 660
- 1199 Leitao, Alipio, Penacova, Coimbra.—Red wine and vinegar. 660
- 1200 Meirelles, Antonio de Chaves, Povoas de Midões, Coimbra.—Red wine. 660
- 1201 Lima, Jose Duarte, Cartaxo, Lisbon.—Wine. 660
- 1202 Moraes, Jose Alves de, Vinhais, Braganza.—Wine. 660
- 1203 Madeira, Jose, Povoas de Midões, Coimbra.—Red wine. 660
- 1204 Leite, Francisco de Moraes, Villa Flor, Braganza.—Wine and vinegar. 660
- 1205 Leite, Guilherme da Costa, Santo Thirso, Porto.—Wine. 660
- 1206 Oliveira, Augusto Jose de, Lisbon.—Red wine. 660
- 1207 Oliveira, Jose Vas Rato de, Alter do Chao, Portalegre.—Brandy and vinegar. 660
- 1208 Ornellas, A. de, Funchal, Madeira.—Madeira wine. 660
- 1209 Magalhaes, Joao Guedes de.—Red wine. 660
- 1210 Moraes, Joaquim Claudino de, Regoa, Villa Real.—Red wine. 660
- 1211 Monteiro, Joaquim Soares, Mesquinhat, Oporto.—Wine. 660
- 1212 Magalhaes, Roberto Augusto Pinto de, Valle de Mendis, Villa Real.—Red wine. 660
- 1213 Motta, Luiz Antonio, Ferreira da Andraes, Villa Real.—Wines. 660
- 1214 Mourao, Luis Teixeira, Casal de Loivos, Villa Real.—Red wine. 660
- 1215 Marques, Joao Antonio de Meirelles, Villa Real.—Red wine. 660
- 1216 Monteiro, Jose Justino Teixeira, Covas do Douro, Villa Real.—Red wine. 660
- 1217 Mello, Joao, C. da Rosa Malheiro, Candedo, Villa Real.—White wine, brandy. 660
- 1218 Mathews, Jose Paulino, S. Miguel de Lobργο, Villa Real.—Wine. 660
- 1219 Lobo, Nicolau Joaquim Salles, Evora.—Red wine, vinegar. 660
- 1220 Lopes, Jose Ramos, Airo, Braga.—Wine. 660
- 1221 Meirelles, Antonio Nunes de Chaves, Povoas de Midões, Coimbra.—Red wine. 660
- 1222 Miranda, Jose Victorino de, Matcaes, Lisbon.—Red wine. 660
- 1223 Pinto, Joao Adriano, Alfandega da Fé, Braganza.—Brandy. 660
- 1224 Pascoal, Otero, Oporto.—Beer. 660
- 1225 Macedo, Antonio Luis de, Arruda dos Vinhos, Lisbon.—Red wine. 660
- 1226 Martins, Luis Antonio, Torres Vedras, Lisbon.—Wine. 660

## Animal and Vegetable Products.

- 1227 Moniz, Antonio Bernardino da Fonseca, Barocal, Guarda.—Wine. 660
- 1228 Madeira, Alexandre Jose, Candedo, Villa Real.—Wine. 660
- 1229 Monteiro, Abilio Affonso da Silva, Ventosa do Bairro, Aveiro.—Red wine. 660
- 1230 Mello, Antonio Maria de, Miranda do Corvo, Coimbra.—Red wine. 660
- 1231 Marques Estevaso Jose, Aldeia de Mato, Evora.—White and red wine. 660
- 1232 Marques Maria Jose Perpetua, Redondo, Evora.—Red wine. 660
- 1233 Pavao, Antonio Augusto Goncalves, Villa Real.—Wine. 660
- 1234 Pinheiro, Custodio Jose, Valverde, Villa Real.—Wine. 660
- 1235 Moura, Christiano Augusto da Silva, Midocs, Coimbra.—Red wine. 660
- 1236 Moraes & Mouro, Figueira, Coimbra.—Wine. 660
- 1237 Lima, Antonio Joaquim Fernandes, Villa Nova da Cerveira, Vianna do Castelo.—Wine. 660
- 1238 Marques, Estevaso Jose, Evora.—Brandy. 660
- 1239 Miranda, Felix Honorio Gomes de, Torres Vedras, Lisbon.—Red and white wine. 660
- 1240 Lima, Jose Duarte de, Cartaxo, Santarem.—Wine, vinegar. 660
- 1241 Leito, Manuel Pinto, Fontes, Villa Real.—Wine. 660
- 1242 Lago, Francisco d'Assis Pereira do, Arcos, Braganca.—Red wine. 660
- 1243 Mattos, Joao Chrisostomo de Carvalho, Villarouco, Viseu.—Red wine. 660
- 1244 Levita, Joaquim Fortunato, Portalegre.—Brandy. 660
- 1245 Lopes, Manuel Joao, Fuseta, Faro.—Red wine. 660
- 1246 Negreiros, Bento Antonio, Trigo de Mirandella, Braganca.—Red wine. 660
- 1247 Naples, Miguel Tudella de Souza, Castellões, Viseu.—White wine. 660
- 1248 Lima, Antonio dos Santos, Pavia de Midocs, Coimbra.—Brandy. 660
- 1249 Leitao, A. Baptista Covilha, Castello Branco.—Red wine. 660
- 1250 Lopes, Antonio Camillo da Silva, Coruche, Santarem.—Wine. 660
- 1251 Lopes, Jose Olaia, Castello Branco.—Wines. 660
- 1252 Lobo, Bernardino Vas, Celorico de Basto, Braga.—Wine. 660
- 1253 Lopes, Joao da Cunha, Silveiras, Viseu.—Wine. 660
- 1254 Lobo, Jose Nogueira Pereira, Ranhudos, Viseu.—Wine. 660
- 1255 Leco, Manuel da Cunha, Sobreira, Oporto.—Corkwood and corks. 660
- 1256 Lima, Joao Ferreira, Braganca.—Wine. 660
- 1257 Magalhães, Francisco Jose, Portalegre.—Red wine. 660
- 1258 Motta, Raulfo Antonio, Portimao, Faro.—Red and white wine. 660
- 1259 Mello, Miguel Antonio de Sousa, Villa Franca de Xira, Lisbon.—Red wine. 660
- 1260 Moita, Antonio F. da Silva, Torres Novas, Santarem.—Wines. 660
- 1261 Jansen, J. H., & Co., Lisbon.—Beer and ginger beer. 660
- 1262 Kopke & Co., Massarellas, Oporto.—Port wine and muscadine wine. 660
- 1263 Leacock & Co., Funchal, Madeira.—Wine. 660
- 1264 Morte Certa, Antonio Pedro Cardoso, Alcacer do Sal, Lisbon.—Wine. 660
- 1265 Louro, Francisco Rico, Aldeia de Matto, Evora.—Red wine. 660
- 1266 Mello, Jose de, Thomar, Santarem.—Red and white wine. 660
- 1267 Moraes, Jose Correa Pinto de, Constanca, Santarem.—Red and white wine. 660
- 1268 Martins, Jose Maria, Setubal, Lisbon.—Wines. 660
- 1269 Martins, Joao Pedro, Setubal, Lisbon.—Wines. 660
- 1270 Martel, Joao Campello Trigueiros, Sacavem, Lisbon.—Red and white wine. 660
- 1271 Mesquita, Antonio da Silva, Cartaxo, Santarem.—Red and white wine. 660
- 1272 Machado, Thomas Jose, Lisbon.—Wines. 660
- 1273 Monteiro, Antonio Manuel, Villalba, Beja.—Red wine. 660
- 1274 Marques de Pombal, Oeiras, Lisbon.—White and red wine. 660
- 1275 Machado, Honorato Jose Torres, Azambuja, Lisbon.—Brandy, wine, and vinegar. 660
- 1276 Ribeiro, Francisco Maria, Couto de Cima, Viseu.—Wine. 660
- 1277 Ribeiro, Serafim Garcia, Oliveira do Hospital.—Brandy. 660
- 1278 Rodrigues, Antonio Caetano, Oporto.—Port wine. 660
- 1279 Ribeiro, Manuel, Penafiel, Oporto.—Brandy. 660
- 1280 Rodrigues, Antonio, Eiro, Braganca.—Brandy. 660
- 1281 Magalhães, Vicente Xavier, Tavira, Faro.—Red wine. 660
- 1282 Mendonca, Manuel Marcal, Oelhao, Faro.—Red wine. 660
- 1283 Mira, Jose Maria de, Vidigueira, Beja.—White wine. 660
- 1284 Motta, Anacleto da Fonseca, Sardoal, Santarem.—Wine. 660
- 1285 Moreno, Jose Joaquim, S. Thiago, Lisbon.—Wine. 660
- 1286 Ribeiro, Jose Joaquim, S. Joao da Pesqueira, Viseu.—Red wine. 660
- 1287 Rego, Manuel Diogo, Moncorvo, Braganca.—Red wine. 660
- 1288 Camacho, Henrique Jose Maria, Funchal, Madeira.—Superior reserve wines, and other qualities. 660
- 1289 Creswell & Co., Lisbon.—Red wine. 660
- 1290 Coutinho, Joaquim Jose, Alpiarca, Santarem.—Red and white wine and brandy. 660
- 1291 Carneiro, Joao Bento Gil, Azambuja.—Red wine. 660

## Animal and Vegetable Products.

- 1292 Corte Real, Antonio Freire, Valle de Prazeres, Castello Branco.—Red wine and brandy. 660
- 1293 Rego, Francisco Maia do, Alfai-dega da Fé, Bragança.—Red wine. 660
- 1294 Roma, J. M. Gonçalves, Trovis-coso, Vianna.—Wine. 660
- 1295 Robollo, Domingos Jose, Cas-tello Branco.—Red wine. 660
- 1296 Roquette, Jose Ferreira, Salva-terra, Santarem.—Wines. 660
- 1297 Ramires, Balthazar Peres, Evora.—Wine and vinegar. 660
- 1298 Ramalho, Antonio Pinheiro, Re-guengo, Evora.—White wine. 660
- 1299 Ramos, Antonio Pedro de Car-valho, Rio Maior, Santarem.—White wine. 660
- 1300 Rosa, Jose Maria, Rio Maior, Santarem.—White wine. 660
- 1301 Raposo, Joaquim Nunes Vieira, Coruche, Santarem.—Red wine. 660
- 1302 Ribeiro, Joaquim Antonio, Alca-cer do Sal, Lisbon.—Red wine. 660
- 1303 Rodrigues, Manuel Antonio, So-breira, Villa Real.—White wine. 660
- 1304 Chaves, Jose Luciano Pereira, Carrica, Viseu.—Wine. 660
- 1305 Borges de Sousa, Asambuja, Lis-bon.—White wine. 660
- 1306 Costa, Jose da, Abraveses, Viseu.—Wine. 660
- 1307 Bernardo, Vasco, Coruche, Santa-rem.—Red wine. 660
- 1308 Cossart, Gordon, & Co., Madeira.—Madeira wine. 660
- 1309 Carvalho, Jose Raymundo Lopes de, Torres Novas, Santarem.—Red wine. 660
- 1310 Carnelho, Victorino Antonio do Reis, Anca, Constanhede.—Vinegar. 660
- 1311 Carvalho, Francisco Garcia de, Arganil, Coimbra.—Vinegar. 660
- 1312 Soeiro, Balthazar Rodrigues, jr., Campo Maior, Portalegre.—Brandy. 660
- 1313 Sobrinho, Jose Martins Leitao, Villa de Frades, Beja.—Red wine. 660
- 1314 Silva, Antonio Jose da, Salvaterra, Santarem.—Red wine. 660
- 1315 Sauvage, C., Vendas Novas, Evo-ra.—Brandy. 660
- 1316 Sequeira e Sa, Francisco Theo-dorico, Vidigueira, Beja.—White wine. 660
- 1317 Soure, Joaquim Manuel Soares de, Ferreira, Beja.—Red wine. 660
- 1318 Santos, Jose Fogaco de C. e, Al-jubere, Lisbon.—Wine. 660
- 1319 Silva, Joaquim Jose de Freitas e, Cartaxo, Santarem.—Wines. 660
- 1320 Santos, Antonio Vicente dos, Aphandra, Lisbon.—Wines. 660
- 1321 Silva, Jose Maria da, Elvas, Por-talegre.—Brandy and red wine. 660
- 1322 Canto e Castro, Miguel do, Lisbon.—White wine. 660
- 1324 Calasons, Jose Dias de S., Gavião, Portalegre.—Red wine. 660
- 1325 Coutinho, Luis da Silva, Cascaes, Lisbon.—White and red wine. 660
- 1326 Costa, Antonio Jacome da, Gavião, Portalegre.—Brandy. 660
- 1327 Silva, Jose Gonçaves da, Porta-legre.—Red wine and brandy. 660
- 1328 Soares, Jose Severino, Ribeira de Santarem.—Wines and alcohol. 660
- 1329 Carvalho, Jose Joaquim de, Ere-mida, Villa Real.—Wine. 660
- 1330 Couraca, Jose de Gouveia, Feia, Viseu.—Wine. 660
- 1331 Castello Branco, Fernando d'Al-meida Loureiro, S. Miguel do Outeiro, Viseu.—Wine. 660
- 1332 Carinho, Bartholomeu, Montar-gil, Portalegre.—Red and white wine. 660
- 1333 Caldas, Manuel Duarte Silva, S. Joao Baptista, Santarem.—Red wine. 660
- 1334 Couto, Antonio Severino do, Pragança, Lisbon.—Wine. 660
- 1335 Castro, Jose d'Almeida Silva e, Miranda do Corvo, Coimbra.—Vinegar. 660
- 1336 Carvalho, Ananias Cardoso de, S. Thago, Viseu.—Wine. 660
- 1337 Cabral, Constantino do Valle Coelho, Oporto.—Port wine. 660
- 1338 Cabral, Antonio Paes, Semborim, Viseu.—Wine. 660
- 1339 Carvalho, Alonso Pinto Teixeira de Santa Martha de, Penaguiao, Villa Real.—Wine. 660
- 1340 Cabrita, Joao Carlos, Cuba, Beja.—Wine. 660
- 1341 Cabreira, Antonio, Evora.—Red and white wine and brandy. 660
- 1342 Carvalhosa, Jose Felix de Alme-da, Odisqueira, Lisbon.—White wine. 660
- 1343 Costa Cabral, Joao Rebello da, Lisbon.—Red and white wine. 660
- 1344 Pereira, Antonio d'Almeida, S. Pedro de Franca, Viseu.—Wine. 660
- 1345 Pecanha, Jose Pereira de Castro, Vianna do Castello.—Wine. 660
- 1346 Carvalho, Antonio Marques de, Chamusca, Santarem.—White and red wine and brandy. 660
- 1347 Carvalho, Joao Affonso de, Villa Franca de Xira, Lisbon.—Red and white wine. 660
- 1348 Cunha, Joao Augusto da, S. Joao da Ribeira, Santarem.—Red and white wine. 660
- 1349 Cardoso, jr., Setubal, Lisbon.—Wines and liquors. 660
- 1350 Carvalho, Francisco Jose de, Fam.—Anisette brandy. 660
- 1351 Capello, Manuel Joaquim da Silva, Vill' Alva, Beja.—Red wine. 660
- 1352 Costa, Joao Maria da, Alhazada, Lisbon.—Red wine. 660
- 1353 Costa, Domingos Antonio da, Elvas, Portalegre.—Red and white wine. 660
- 1354 Condessa Geras de Lima, Lisbon.—Wine. 660
- 1355 Camara, Tristao Prestrelle da, Funchal, Madeira.—Dry Madeira wine. 660
- 1356 Claro, Francisco Germano, Lis-bon.—Red and white wine. 660



## Animal and Vegetable Products.

- 1357 Campos, Francisco Ferreira, Rio Malor, Santarem.—Red wine. 660
- 1358 Cruz, Manuel Mendes da, Lagares, Coimbra.—Wine. 660
- 1359 Carneiro, Custadio Gil dos Reis, Refojos, Oporto.—Wine. 660
- 1361 Borges, Candido Marcelino, Torres Novas, Santarem.—Red and white wine. 660
- 1362 Blanco, Joao Diago, Alvito, Beja.—Red and white wine. 660
- 1363 Blandy, Carlos R., Funchal.—Madeira wine. 660
- 1364 Carvalho, Dionisio Antonio N. de, Leniche, Feiria.—Wine and vinegar. 660
- 1365 Cunha, Alexandre de Sena, Coruche, Santarem.—Red wine. 660
- 1366 Cabrita, Joao Carlos, Cuba, Beja.—Wines and liquors. 660
- 1367 Botelho, Antonio da Costa, Santarem.—Wine. 660
- 1368 Barcellos, Francisco Maria, Torres Vedras, Lisbon.—Red and white wine. 660
- 1369 Salgueiro, Baroness of, Leiria.—Red wine. 660
- 1370 Barao de Viamonte, Leiria.—Red wine. 660
- 1371 Barros e Cunha, Jose de, Torres Vedras, Lisbon.—Wine. 660
- 1373 Brito, Jose Maria de Barros Carvalhaes, Nisa, Portalegre.—Red wine and brandy. 660
- 1374 Biker, Antonio Pedro, Faro.—Red wine. 660
- 1375 Carneira, Jose Rodrigues, Anadia, Aveiro.—Red and white wine. 660
- 1376 Castro, Damiao Martins, S. Pedro da Cova, Porto.—Red wine. 660
- 1377 Coutinho, Fernando Affonso d'Almeida, Cantanhede, Coimbra.—Red and muscadine wine. 660
- 1378 Canella, Agostinho, Arcos, Aveiro.—Red and white wine. 660
- 1379 Campos, Antonio de Freitas, Arcos, Aveiro.—Red wine. 660
- 1380 Costa Pereira & Co., Figueira, Coimbra.—Red and white wine. 660
- 1381 Castanheira, Jose Rodrigues Mendes, Azere, Coimbra.—Wine. 660
- 1382 Caceres, Francisco Albuquerque Melio Pereira, Pereira, Oporto.—White and red wine. 660
- 1383 Chaves, Antonio Joaquim, Sta. Martha de Penaguiao, Villa Real.—Wine. 660
- 1384 Coutinho, Jose Maria d'Almeida, Cidadelhe, Villa Real.—Wine. 660
- 1385 Castro, Luis de, Valle de Passos, Villa Real.—Red wine. 660
- 1386 Cruz, Joaquim Rodrigues, Mesao Frio, Villa Real.—White wine. 660
- 1387 Cancellia, Francisco, Arcos, Aveiro.—Red and white wine. 660
- 1388 Cunha, Antonio Duarte da, Freixinho, Viseu.—Red wine. 660
- 1389 Costa, Victorino Alves da, Arumamar, Viseu.—Wine. 660
- 1390 Cardoso, Joaquim Maria do Amaral, Tamega, Aveiro.—Red and white wine. 660
- 1391a Correa, Jose Augusto, Santa Comba Dao, Viseu.—Red wine. 660
- 1392 Cardoso, Antonio, Abreiro, Braganca.—Red wine. 660
- 1393 Castro, Ayres de S. Mariz e, Carrasada d'Anicias, Braganca.—Wine. 660
- 1394 Castro, Jose de, Braganca.—Muscadine and other wines. 660
- 1395 Commenda, Elias Rebeiro, Villa Flor, Braganca.—Red wine. 660
- 1396 Cunha, Bernardino Alves Teixeira, Celorico de Basto, Braga.—Wine. 660
- 1397 Cunto, Manuel d'Aguino Alves do, Nogueira, Villa Real.—Wine. 660
- 1398 Castro, Antonio Augusto d'Almeida, Mesao, Villa Real.—Wine. 660
- 1399 Bairrada Commercial Wine Co., Vaccarica, Aveiro.—Red and white wine. 660
- 1400 Camello, Joaquim Augusto da Silveira, Penafiel, Oporto.—Wine and cider. 660
- 1401 Coutinho, Antonio Joaquim de Moura, Outeiro, Braga.—Wine. 660
- 1402 Casa de Passos, Barcellos.—Wine. 660
- 1403 Carvalho, Jose Velloso Pinto de, Lamego, Viseu.—White wine. 660
- 1404 Cruz, Jose Lopes da, Nogueira, Villa Real.—Red wine. 660
- 1405 Costa, Jose Joaquim Pinto da, Nogueira, Villa Real.—Red wine. 660
- 1406 Cordeiro, Antonio Montes, Godim, Villa Real.—Red wine. 660
- 1407 Champallimaud, Antonio Montes, Godim, Villa Real.—Red wine. 660
- 1408 Chaves, Manuel Jose da Cunha, Valle Passos, Villa Real.—Wine. 660
- 1409 Asevedo, Jose Ferreira da Silva, Rates, Oporto.—Red wine. 660
- 1410 Alexandre, Joaquim Peres de, Taboa, Coimbra.—Red wine. 660
- 1411 Alexandre, Manuel, Taboa, Coimbra.—Red wine. 660
- 1412 Abreu, Francisco Jose de, Lamego, Viseu.—Red wine. 660
- 1413 Costa, Francisco Bento da, Gomei, Viseu.—Wine. 660
- 1414 Contada, Jose Domingues, Carapicos, Braga.—Wine. 660
- 1415 Carvalho, Jose Teixeira da, Cavez, Braga.—Wine. 660
- 1416 Castello Branco, Manuel Antonio Pereira, Abraveses, Viseu.—Wine. 660
- 1417 Aragao, Alexandre de, Villa Flor, Braganca.—White and red wine. 660
- 1418 Abreiro, Joao Vaz de, Mirandella, Braganca.—Wine. 660
- 1419 Almeida, Ignacio Bernardino de, Alfondega da Fé, Braganca.—White wine. 660
- 1420 Asevedo, Jose de, Villa Flor, Braganca.—White wine. 660
- 1421 Andrade, Basilio Augusto Xavier de, Coimbra.—Red and white wines. 660
- 1422 Almeida, Manuel Lourenco, Oporto.—Muscadine wine. 660

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- 1424 Administrative Council of Montenor-o-o-Velho, Montenor-o-Velho, Coimbra.—Vinegar. 660
- 1425 Alcoforado, Maria H. S., Barcellos, Braga.—Wine. 660
- 1426 Amaral, Antonio Gomes Silva do, Cima de Villa, Viseu.—Wine. 660
- 1427 Andrade, Bernardo Antonio da Silva, Cima de Villa, Viseu.—Wine. 660
- 1428 Almeida, Jose Bernardo de, Lordosa, Viseu.—Wine. 660
- 1429 Amaral, Leonor Carvalho Fonseca, Mangualde, Viseu.—Wine. 660
- 1430 Amaral, Bernardo Rodrigues do, Espinho, Viseu.—Wine. 660
- 1431 Avelino, Joaquim Cumieira, Villa Real.—Bastardo and muscadine wine. 660
- 1432 Azevedo, Antonio Lopes de Nogueira, Villa Real.—Red and white wine. 660
- 1433 Pereira, Joaquim J. Peral, Lisbon.—Wines. 660
- 1434 Aragao, Alexandre A. de Mattos Mascarenhas Vasconcellos, Sebal Grande, Coimbra.—Vinegar. 660
- 1435 Antonio Nicolau d'Almeida jr., & Bro., Oporto.—Wine, port wine, and brandy. 660
- 1436 Amaral, Pedro d'Albuquerque Silva, Mangualde, Viseu.—White and red wines. 660
- 1437 Andressen, J. H., Oporto.—Port wine. 660
- 1438 Rodrigues, Antonio Cactano, & Co., Oporto.—Wines. 660
- 1439 Alves, Francisco, Passacos, Villa Real.—Wine. 660
- 1440 Moura, Antonio Gomes de, & Co., Oporto.—Wine and port wine. 660
- 1442 Sarmento, Bernardo Figueiredo Sepulveda, Santa Justa, Braganca.—Red and white wine. 660
- 1443 Sousa, Joaquim Jose de, Ferreira, Vianna do Castello.—Wine. 660
- 1444 Silva, Antonio Xavier Torres e, Villa de Caminha.—Wine. 660
- 1445 Santos, Antonio dos, Povoa de, Lusitannas, Viseu.—Wine. 660
- 1446 Sampalo, Jose da Cunha, Villa Nova de Famalicao, Braga.—Wines. 660
- 1447 Souto Maior, Lourenco da Cunha, S. Martinho de Dunna, Braga.—Wine. 660
- 1448 Sousa, Jose Henriques Coelho de, Refoyos, Braga.—Wine. 660
- 1449 Paes, Antonio da Silva, Parada, Viseu.—White and red wine. 660
- 1450 Poiars, Antonio Jose da Silva, Contanhede, Coimbra.—Red wine. 660
- 1451 Pereira de Mello, Antonio Leite, Peral, Lisbon.—Wines. 660
- 1452 Silva, Antonio Ferreira da, Sabrosa, Villa Real.—White wine. 660
- 1453 Silva, Antonio da, Nogueira, Villa Real.—Red wine. 660
- 1454 Sequeira, Luis Clemente de, Ervedosa, Viseu.—Red wine. 660
- 1455 Souza, Hector de Lemos e, Sangeimil, Viseu.—Wine. 660
- 1456 Soares, Joao Baptista Ribeiro, Lamego, Viseu.—Red and white wine. 660
- 1457 Sousa, Manuel Jose, Coimbra.—Red wine. 660
- 1458 Sousa, Julio Cesar, Paradolinho, Villa Real.—Red and white wine. 660
- 1459 Serodio, Jose Antonio Goncalves, Passos, Villa Real.—Wine and brandy. 660
- 1461 Sandeman & Co., Oporto.—Port wine. 660
- 1462 Agricultural Society of Oporto, Oporto.—White and red wine. 660
- 1463 Portella, jr., Jose Ferreira, Anadia, Aveiro.—Red wine. 660
- 1464 Pinto, Antonio Peixoto, Sabrosa, Villa Real.—Wine. 660
- 1465 Pinto, Manuel Feireira, Cambres, Viseu.—Red wine. 660
- 1466 Silva, Francisco Pereira da, Carrasada d'Ancias, Braganca.—Wine. 660
- 1467 Simoes, Antonio Augusto da Costa, Vaccarica, Aveiro.—White wine. 660
- 1468 Sarmento, Antonio Ferreira, Vinhaes, Braganca.—Wine. 660
- 1469 Seabra, Alexandre de, Arcos, Aveiro.—White and red wine. 660
- 1470 Sobral, Jose Joaquim, Soutello, Viseu.—Muscadine and white wines. 660
- 1471 Sousa, Jose Luis Rodrigues de, Valenca, Vianna do Castello.—Wine. 660
- 1472 Simoes, Joaquim Antonio, Figueira, Coimbra.—Red and white wine, brandy, vinegar. 660
- 1473 Salgado Domingos, Carrasada d'Ancias, Braganca.—Red wine. 660
- 1474 Pinto Coelho, Carlos Z., Lisbon.—White and red wine. 660
- 1475 Pereira, Joaquim, Cadaval, Lisbon.—Red wine. 660
- 1476 Paulo Jorge, Carcavellos, Lisbon.—Red and white wine. 660
- 1477 Pereira, Antonio Rodrigues, Peniche, Leiria.—Wine and vinegar. 660
- 1478 Pinheiro, Antonio Joaquim, Pina-macor, Castello Branco.—Red wine. 660
- 1479 Pimenta, Jacintho Francisco, Ponte Sor, Portalegre.—Red and white wine. 660
- 1480 Prego, Joaquim Romao Mendes, Reguengo, Evora.—Red wine. 660
- 1481 Pinheiro, Joaquim Garcia, Reguengo, Evora.—Vinegar. 660
- 1482 Pinto, Maria Rita Ramos Borges, Folgosa, Viseu.—Red and white wine. 660
- 1483 Pereira, Adrianno Rodrigues, Anadia, Aveiro.—Red wine. 660
- 1484 Portella, Jose Ferreira, Anadia, Aveiro.—Wine. 660
- 1485 Serrado, Viscount of, Viseu.—Wine. 660
- 1486 Villafanba, Antonio de, Tondella, Viseu.—Red and white wine. 660
- 1488 Viseu, Henrique Nunes, Santar, Viseu.—Wine. 660
- 1489 Gomes, Antonio Luis, Valenca, Vianna do Castello.—Wine and brandy. 660

## Animal and Vegetable Products.

- 1490 Guimaraes, Victorino Barbosa, Penafiel, Oporto.—Wine. 660
- 1491 Guisado, Joao Baptista Ribeiro, Peniche, Leiria.—Wine and vinegar. 660
- 1492 Galvao, Sabino Jose M. dos Anjos, Azeira, Lisbon.—Wine. 660
- 1493 Vasconcellos, Francisco P. Carvalho, Valle Cavez, Braga.—Wine. 660
- 1495 Vasconcellos, Augusto Cesar Carvalho, Valle Cavez, Braga.—Wine. 660
- 1496 Vasconcellos, Bento M. Pereira Pita, Monsao, Vianna do Castelo.—Wine. 660
- 1497 Veiga, Jose da Cunha Costa, Povoa de Midões, Coimbra.—Red wine. 660
- 1498 Montariol, Viscount of, S. Victor, Braga.—Wine. 660
- 1499 Vieira, Bernardo de Campos, Taboa, Coimbra.—Red wine. 660
- 1500 Teixeira, Francisco Manuel, Mirandella, Braganca.—Red wine. 660
- 1502 Teixeira, Jose Luis, Mirandella, Braganca.—Red wine. 660
- 1503 Teixeira, Joao Firmino, Mirandella, Braganca.—Wine. 660
- 1504 Themes, Fortunato de Cerqueira, Valdigem, Viseu.—Red wine. 660
- 1505 Tavares, Jose da Costa Andrade, Alpedrinha, Castello Branco.—Red wine. 660
- 1506 Tavares, Joao da Silva, Estremoz, Evora.—Corkwood. 660
- 1507 Tavares, Antonio Bernardo Xavier, Portalegre.—Red wine. 660
- 1508 Torres e Oliveira, Henriqueta Josepha Pereira, Fundao, Castello Branco.—Wine. 660
- 1509 Tavares, Jose Antonio, Lisbon.—White wine. 660
- 1510 Telles, Manuel Joaquin, Evora.—Red wine. 660
- 1511 Themudo, Antonio Dias, Coimbra.—Cognac and liquor. 660
- 1512 Trigo, Jose Antonio Horta da, Villarica, Braganca.—White wine. 660
- 1513 Tacho, Jose Maria da Silva, Tragosa, Viseu.—Wine. 660
- 1514 Teixeira, Joao B. Pacheco, Celorico de Basto, Braga.—Wine. 660
- 1515 Tavares, Antonio Jose, Covilha, Castello Branco.—Wine and vinegar. 660
- 1516 Jusarte, Jose Carlos, Parada, Viseu.—White wine. 660
- 1517 Royal Wine Company of Alto Douro, Oporto.—Vinegar, port wine 1815-1875. 660
- 1518 Lacerda, Alberto Araujo Figueiro dos, Vinhos, Leiria.—Red wine. 660
- 1519 Michon & Gussac, Oporto.—Brandy of grains. 660
- 1520 Madeira, Antonio, Goes, Coimbra.—Brandy. 660
- 1521 Moreira, Antonio Ignacio, Oporto.—Brandy. 660
- 1522 Meneses, Jose Rebelo Cardoso, Timpeira, Villa Real.—Wine. 660
- 1523 Machado, Manuel Alves, Celorico de Basto, Braga.—Wine. 660
- 1524 Magalhaes, Antonio de Barros, Sattam, Viseu.—Wine. 660
- 1525 Marques, Jacintho, Salgueiros, Viseu.—Red and white wine, brandy. 660
- 1526 Magalhaes, Manuel Alexandre de, Budios, Viseu.—Wine. 660
- 1527 Machado, Domingas Alves, Celorico de Basto, Braga.—Wine. 660
- 1528 Moura, Luis Manuel Alves, Celorico de Basto, Braga.—Wine. 660
- 1529 Moscoso, Simao P. Velho, Monsao, Vianna.—Wine. 660
- 1530 Moura, Augusto, Celorico de Basto, Braga.—Wine. 660
- 1531 Moraes, Antonio Carlos, Boelhe, Oporto.—Wine. 660
- 1532 Moraes, Antonio Fernandes, Abelheira, Vianna do Castelo.—Wine. 660
- 1533 Marques, Jose Parada, Jr., Viseu.—Red and white wine. 660
- 1534 Martins, Manuel Jose, Gondomil, Vianna do Castelo.—Wine. 660
- 1535 Meneses, Manuel Antonio, Horta da Villarica, Braganca.—Wine. 660
- 1536 Martins, Jose da Veiga, Carrazeda d'Ancaes, Braganza.—Red wine. 660
- 1537 Magalhaes, Joao da Veiga, Vinhaes, Braganca.—Wine. 660
- 1538 Moraes, Domingos Alves, Poca, Braganca.—Wine. 660
- 1539 Miranda, Antonio Bernardino, Horta da Villarica, Braganza.—White wine. 660
- 1540 Basto, Manuel Jose Teixeira, S. Miguel de Refojo, Braga.  
a Wine. 660  
b Olive oil. 662
- 1541 Abecassis Brothers, Lisbon.  
a Port wine. 660  
b Olive oil. 662
- 1542 Castro, Luis de Mello T. Soares d'Albegasia, S. Thiago, Coimbra.  
a Brandy. 660  
b Olive oil. 662
- 1543 Carvalho, Joao Antonio, Pedrogam, Santarem.  
a White wine. 660  
b Olive oil. 662
- 1544 Carvalho, Carlos Manuel de, Pedrogam, Santarem.  
a White wine. 660  
b Olive oil. 662
- 1545 Caldeira, Joaquim de, Albuquerque, Castello Branco.  
a Wines. 660  
b Olive oil. 662
- 1546 Pereira, Eduardo Augusto, Melxamil, Oporto.  
a Vinegar. 660  
b Olive oil. 662
- 1547 Casqueiro, Jose Maria, Crato, Portalegre.  
a Wine. 660  
b Olive oil. 662
- 1548 Conde da Junqueira, Almeirim, Santarem.  
a Wines. 660  
b Olive oil. 662
- 1549 Cardoso, Manuel Gualdino, Gammeiro, Torres Nevias, Santarem.  
a Brandy and wines. 660  
b Olive oil. 662

## Animal and Vegetable Products.

- 1550 Carvalho, Luis Xavier do Amaral,  
Rio de Moinho, Viseu.  
a Wine. 660  
b Olive oil. 66a
- 1551 Albuquerque, Manuel Lopes,  
Alvito, Braga.—Wine. 660
- 1552 Abreu, Honorato Jose Marchado,  
Zibreira, Lisbon.  
a Red wine. 660  
b Olive oil. 66a
- 1553 Pygnatelli, Jose da Cunha, Guarda.  
a Red and white wine. 660  
b Olive oil. 66a
- 1554 Ramalho, Domingos Antonio,  
Falle Redondo, Evora.  
a Red and white wine and brandy, vinegar. 660  
b Olive oil. 66a
- 1555 Abreu, Carlos de Souza Pinto,  
Valle de Prazeres, Castello Branco.  
a Wine. 660  
b Olive oil. 66a
- 1557 Antonio Nunes de Souza & Co.,  
Covilha, Castello Branco.  
a Wine. 660  
b Olive oil. 66a
- 1558 Athayde, Luis da Silva, Leiria.  
a Red and white wine and brandy. 660  
b Olive oil. 66a
- 1559 Accioli, Joao da Fonseca, Portalegre.  
a Vinegar. 660  
b Olive oil. 66a
- 1560 Beltraa, Jose de Gouvea de Luce-  
na, Anca, Coimbra.  
a Red wine. 660  
b Olive oil. 66a
- 1561 Bogalho, Joao Joaquim, Villa  
Boim.  
a Red and white wine. 660  
b Olive oil. 66a
- 1562 Durao, Pedro Manuel, Castello de  
Vide, Portalegre.  
a Vinegar. 660  
b Olive oil. 66a
- 1563 Caldas, Manuel Duarte de Silva,  
Cartaxo, Santarem.  
a Wine and vinegar. 660  
b Olive oil. 66a
- 1564 Carreira, Joaquim de Salles Simoes,  
Batalha, Leiria.  
a Brandy. 660  
b Olive oil. 66a
- 1565 Faro, Joaquim de Carvalho Asc-  
vedo, Reizende, Viseu.  
a Wine. 660  
b Olive oil. 66a
- 1566 Guimaraes, Jose Lopes, Coimbra.  
a Red wine and brandy. 660  
b Olive oil. 66a
- 1567 Falcão, Luis da Costa, Constança,  
Santarem.  
a Wine. 660  
b Olive oil. 66a
- 1568 Franco, Vital Jose Pereira, Guarda.  
a Red wine. 660  
b Olive oil. 66a
- 1569 Ferreira, Augusto Dias, Santa-  
rem.  
a Wine. 660  
b Olive oil. 66a
- 1570 Franco, Rev., Francisco Guedes,  
Portalegre.  
a Vinegar. 660  
b Olive oil. 66a
- 1571 Franciose, Maria do Carmo, Car-  
taxo, Santarem.  
a Vinegar. 660  
b Olive oil. 66a
- 1572 Guerra, Joaquim Jose da, Elvas,  
Portalegre.  
a Wine and brandy. 660  
b Olive oil. 66a
- 1573 Villarinho, Viscount of, S. Ro-  
mas, Oporto.  
a Muscadine and other wines. 660  
b Olive oil. 66a
- 1574 Prime, Viscount of, Viseu.  
a Red and white wine. 660  
b Olive oil. 66a
- 1575 Jose Ferreira Pinto Basto, Heira  
of, Santa Eulalia de Ferreira, Coimbra.  
a Red wine. 660  
b Olive oil. 66a
- 1576 Joaquin Guilherme de Vascon-  
cellos & Sons, Elvas, Portalegre.  
a Vinegar. 660  
b Olive oil. 66a
- 1579 Lima, Jorge Abraham d'Almeida,  
Aldeia de Paio Pires, Lisbon.  
a Red and white wine. 660  
b Olive oil. 66a
- 1580 Souza d'Alte, Francisco Raposo  
de, Lisbon.  
a Wines. 660  
b Olive oil. 66a
- 1581 Silva, Eliza Ludovina da, Covilha,  
Castello Branco.  
a Wines. 660  
b Olive oil. 66a
- 1582 Silva, Manuel Joaquim da, Re-  
dondo, Evora.  
a Red wine and vinegar. 660  
b Olive oil. 66a
- 1583 Souza, Manuel Lopes de, Guarda.  
a Wines and vinegar. 660  
b Olive oil. 66a
- 1584 Viva, Barreto, Covilha, Castello  
Branco.  
a Red and white wine. 660  
b Olive oil. 66a
- 1585 Alcacer, Viscount of Sal, Lisbon.  
a Wine. 660  
b Olive oil. 66a
- 1586 Oliveira, Rafael Rodrigues de, Tor-  
res Novas, Santarem.  
a Red wine. 66a  
b Olive oil. 66a
- 1587 Castello de Borges, Viscount of,  
Lisbon.  
a Wines. 660  
b Olive oil. 66a
- 1588 Vinua Jorge & Sons, Parreiras,  
Santarem.  
a Brandy. 660  
b Olive oil. 66a
- 1589 Vidal, Antonio Jose Rodrigues,  
Vaccarica, Aveiro.  
a Red and white wine. 660  
b Olive oil. 66a
- 1590 Prime, Viscount of, Viseu.  
a Red and white wine. 660  
b Olive oil. 66a
- 1591 Caevuo, Viscount of, Gaira, Guarda.  
a Wine. 660  
b Olive oil. 66a

Animal and Vegetable Products.

1592 Macedo, Joaquim Augusto de Thomar, Santarem.		1611 Rego, Antonio Profirio Gomes do, Covilha, Castello Branco.	
α Wine.	660	α Wines.	660
β Olive oil.	66a	β Olive oil.	66a
1593 Esperanca, Viscount of, Jose, Evora.		1612 Reis, Antonio Nunes dos, Turci- fal, Lisbon.	
α Brandy, red wine, and vinegar.	660	α Wines.	660
β Olive oil.	66a	β Olive oil.	66a
1594 S. Sebastiao, Viscount of, Leiria.		1613 Relvas, Carlos, Gollega, Santa- rem.	
α Brandy.	660	α Wine.	660
β Olive oil.	66a	β Olive oil.	66a
1595 Mesquita, Pedro Jose de, Sinda, Coimbra.		1614 Ramos, Antonio Maria Taborda, Castello Branco.	
α White wine, vinegar.	660	α Red wine.	660
β Olive oil.	66a	β Olive oil.	66a
1596 Magalhaes, Francisco T., Sinda, Coimbra.		1615 Rodrigues, Joao Antonio, Gran- dola, Lisbon.	
α White wine.	660	α Wine.	660
β Olive oil.	66a	β Olive oil.	66a
1597 Oliveira, Verissimo Ferreira A. de, Montalvao, Santarem.		1616 Silva, Francisco Candido da, Torres Novas, Santarem.	
α Red wine, vinegar.	660	α Wine and brandy.	660
β Olive oil.	66a	β Olive oil.	66a
1598 Pedroso, Maria Jose Lopes, Laves, Coimbra.		1617 Souza, Pedro Augusto Pereira e Abreu, Santa Marinha, Villa Real.	
α Wine, brandy, and vinegar.	960	α Wine.	660
β Olive oil.	66a	β Olive oil.	66a
1599 Lopes, Joaquim Emilio, Leiria.		1618 Sa, Jose Filippe de, Asoia de Baixo, Santarem.	
α Wines and brandy.	66a	α Wine.	660
β Olive oil.	66a	β Olive oil.	66a
1600 Le Cocq, Joao Jose, Castello de Vide, Portalegre.		1619 Seixas, Jose Maria Ayres de, Gavião, Portalegre.	
α Wine.	660	α Wine.	660
β Olive oil.	66a	β Olive oil.	66a
1601 Larcher, Marcal, Ramiro, Porta- legre.		1620 Caires, Manuel A. de Mello Pe- reira, Penalva do Castello, Viseu.	
α Brandy.	660	α Red wine.	660
β Olive oil.	66a	β Olive oil.	66a
1602 Levita, Jose Eduardo, Porta- legre.		1621 Condessa d'Anadia, Santa Clara, Coimbra.	
α Vinegar and brandy.	660	α White and red wine, and vinegar.	660
β Olive oil.	66a	β Olive oil.	66a
1603 Larcher, Maria Jose, Portalegre.		1622 Castello Branco, Amelia Pinto de Tavares, Valle de Prateres, Castello Branco.	
α Vinegar.	660	α White wine.	660
β Olive oil.	66a	β Olive oil.	66a
1604 Mendes, Carlos da Costa Pereira, Thomar, Santarem.		1623 Castello Branco, Ignacio Cardoso de B. Caldeira, Portalegre.	
α Wine.	660	α Red wine.	660
β Olive oil.	66a	β Olive oil.	66a
1605 Machado, Pedro Xavier, Portalegre.		1624 Carrilho Bello, Antonio Marcellino, Castello de Vide, Portalegre.	
α Wine, brandy, vinegar.	660	α Red and white wine, and vinegar.	660
β Olive oil.	66a	β Olive oil.	66a
1606 Moraes, Antonio da Silva, Sar- doal, Santarem.		1625 Castello Branco, Amelia Pinto de Tavares, Valle de Prazeres, Castello Branco.	
α Wine.	660	α White wine.	660
β Olive oil.	66a	β Olive oil.	66a
1607 Quintanilha, Francisco, Cuba, Beja.		1626 Barao do Salgueiro, Leiria.	
α White and red wine.	660	α White and red wine.	660
β Olive oil.	66a	β Olive oil.	66a
1608 Mattoso, Alfredo de Moura, S. Thiago, Coimbra.		1627 Britto, Joao de, Lisbon.	
α White wine, brandy.	660	α Red and white wine, vinegar.	660
β Olive oil.	66a	β Biscuits.	661
1609 Rangel, Manuel de Souza, Guilhu- fe, Oporto.		γ Corn flour.	667
α Wine.	660	1628 Barao de Mogadouro, Freixas, Guarda.	
β Olive oil.	66a	α Red and white wine.	660
1610 Rangel, Diogo, Torres Novas, Santarem.		β Olive oil.	66a
α Alcobu' and white wine.	660		
β Olive oil.	66a		

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 1629 Castro, Miguel Ozorio Cabral de, Santa Clara, Coimbra. 660  
 a Red and white wine. 662  
 b Olive oil.
- 1630 Costeira, Manuel Fernandes, Lamego, Viseu. 660  
 a Red wine. 662  
 b Olive oil.
- 1631 Costa, Lourenco Justiniano da Fonseca, Oliveira do Hospital, Coimbra. 660  
 a Wine. 662  
 b Olive oil.
- 1632 Morao, Maria Emilia d'Almeida, Penamacor, Castello Branco. 660  
 a White wine. 662  
 b Olive oil.
- 1633 Albino Jose de Freitas Almeida & Co., Ega, Coimbra. 660  
 a Wines. 662  
 b Olive oil.
- 1634 Asambuja, Antonio Maria da, Means, Coimbra. 660  
 a White wine. 662  
 b Olive oil.
- 1635 Pontes, Francisco Ferras Tavares de, Mirando de Corvo, Coimbra. 660  
 a Red wine. 662  
 b Olive oil.
- 1636 Pinto, Antonio Rodrigues, Coimbra. 660  
 a Wine and vinegar. 662  
 b Olive oil.
- 1637 Pinto, Augusto Leal de Gouvea, Miranda do Corvo, Coimbra. 660  
 a Red and white wine. 662  
 b Olive oil.
- 1638 Pereira, Antonio Ignacio, Redondo, Evora. 660  
 a Brandy, red wine, vinegar. 662  
 b Olive oil.
- 1639 Accioli, Joao da Fonseca, Portalegre. 660  
 a Vinegar. 662  
 b Olive oil.
- 1640 Melleiro, Francisco Carmello, Lisbon.—Macaroni. 661
- 1641 Pinto, Jose Clemente, Sta. Cruz, Coimbra.—Macaroni. 661
- 1642 Cruz, Jose Francisco da, Coimbra.—Biscuits. 661
- 1643 Costa, Eduardo Antonio da, Lisbon.—Biscuits. 661
- 1644 Silva, Eduardo da Conceicao e, Lisbon.—Biscuits. 661
- 1645 Schurmann, Lisbon.—Biscuits. 661
- 1646 Silva, Estavao Ribeiro da, Lisbon.—Bread. 661
- 1647 Aurajo, Antonio Correa de, Coimbra.—Biscuits. 661
- 1648 Administrator of the Conselho of Guimaraes, Guimaraes, Braga.—Olive oil. 662
- 1649 Papanca, Manuel Augusto Mendes, Reguengos, Evora.—Olive oil. 662
- 1650 Pina, Manuel Maria de, Portalegre.—Olive oil. 662
- 1651 Pereira, Jose Ignacio, Elvas, Portalegre.—Olive oil. 662
- 1652 Proenca, Francisco Tavares d'Almeida, Castello Branco.—Olive oil. 662
- 1653 Possidonio, Antonio, Montalvao, Portalegre.—Olive oil. 662
- 1654 Sobral, Bernardo Moreira Coelho, Parada, Viseu.—Olive oil. 662
- 1655 Almeida, Silva, & Co., Lisbon.—Olive oil. 662
- 1656 Almeida, Antonio Joaquim de, Villa Nova de Ourem, Santarem.—Olive oil. 662
- 1657 Abreu, Francisco Rodrigues de, Abrantes, Santarem.—Olive oil. 662
- 1659 Almeida, Manuel d', Gafanhao, Viseu.—Olive oil. 662
- 1660 Abreu, Joao Lopes Coelho de, Barcouco, Aveiro.—Olive oil. 662
- 1661 Almeida, Antonio Ribeiro da Costa e, Sta. Leocadia de Baio, Oporto.—Olive oil. 662
- 1662 Aragao, Alexandre de, Villa Flor, Braganca.—Olive oil. 662
- 1663 Sachetti, Casimiro Barreto, N. S. da Gloria, Aveiro.—Olive oil. 662
- 1664 Seabra, Alexandre, Arcos, Aveiro.—Olive oil. 662
- 1665 Santos, Josepha Maria das, Belasza, Povoa de Varzim.—Olive oil. 662
- 1666 Silva, Manuel Ribeiro da, Ferreira, Viseu.—Olive oil. 662
- 1667 Silveira, Manuel Jose da, Arganil, Coimbra.—Olive oil. 662
- 1668 Brito, Joao Fernandes Soares de, Nisa, Portalegre.—Olive oil. 662
- 1669 Barros, Luis Xavier de, Portalegre.—Olive oil. 662
- 1670 Barros Gomes, B., Lisbon.—Olive oil. 662
- 1671 Castro, Joaquim Jose Paditha de, Abrantes, Santarem.—Olive oil. 662
- 1672 Costa, Antonio da, Elvas, Portalegre.—Olive oil. 662
- 1673 Conceiro, Joaquim Rodrigues, Elvas, Portalegre.—Olive oil. 662
- 1674 Cosillero, Manuel Goncalves, Valle da Serra, Santarem.—Olive oil. 662
- 1675 Corinho, Jose Maria, Montargil, Portalegre.—Olive oil. 662
- 1676 Coelho, Manuel Diogo, Castello de Vide, Portalegre.—Olive oil. 662
- 1677 Callado Jr., Joao da Costa, Alter do Chao, Portalegre.—Olive oil. 662
- 1678 Cunha Ozorio, Joaquim Felizardo da, Arronches, Portalegre.—Olive oil. 662
- 1679 Conde, Domingos Lopes, Montalvao, Portalegre.—Olive oil. 662
- 1680 Peixoto, Jose Nunes de Souza, Penafiel, Oporto.—Olive oil. 662
- 1681 Continho, Joao da Fonseca, Portalegre.—Olive oil. 662
- 1682 Chicorro, Antonio Maria, Portalegre.—Olive oil. 662
- 1683 Carvalho, Antonio Jose de, Elvas, Portalegre.—Olive oil. 662
- 1684 Correa, Joaquim, Penacova, Coimbra.—Olive oil. 662
- 1685 Carvalho, Simao Pinto de Mesquita, Sta. Leocadia, Oporto.—Olive oil. 662
- 1686 Carvalho, Joao Baptista, Valle Passos, Villa Real.—Olive oil. 662
- 1687 Cardoso, Francisco Antonio Lopes, Monvorio, Braganca.—Olive oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products.

- 1688 Conde da Graciosa, Arcos, Aveiro.—Olive oil. 662
- 1689 Costa, Lucio Jose da, Salzedas, Visen.—Olive oil. 662
- 1690 Continho, Fernando Afonso d'Almeida, Sepins, Coimbra.—Olive oil. 662
- 1691 Souza, Jose d'Andrade e, Portalegre.—Olive oil. 662
- 1692 Souza, Jose Saldanha Oliveira e.—Olive oil. 662
- 1693 Santa Clara, Francisco de Paula, Elvas, Portalegre.—Olive oil. 662
- 1694 Salazar, Manuel Maia, Torres Novas, Santarem.—Olive oil. 662
- 1695 Reis, Antonio dos, Lisbon.—Olive oil. 662
- 1696 Rijo, Joaquim Antonio, Elvas, Portalegre.—Olive oil. 662
- 1697 Ramires, Manuel Peres, Evora.—Olive oil. 662
- 1698 Regallo, Antonio Meira, Portalegre.—Olive oil. 662
- 1699 Ratto, Antonio Gonsalves, Barquinha, Santarem.—Olive oil. 662
- 1700 Ramos, Manuel Nogueira, Goes, Coimbra.—Olive oil. 662
- 1701 Rodrigues, Manuel Antonio, Ferradosa, Braganca.—Olive oil. 662
- 1702 Rocha, Serafim de Sousa, Canelas, Oporto.—Olive oil. 662
- 1703 Rocha, Antonio Coelho da, Gondomar, Oporto.—Olive oil. 662
- 1704 Mendonca, Joao Themudo de Oliveira, Abrantes, Santarem.—Olive oil. 662
- 1705 Mendes, Joas Jose Soares, Abrantes, Santarem.—Olive oil. 662
- 1706 Barao de Casaes do Douro, Casaes do Douro, Visen.—Olive oil. 662
- 1707 Lemos, Joao Gonsalves de, Souza, Coimbra.—Olive oil. 662
- 1708 Leite, Joao Baptista de Araujo, Mirandella, Braganca.—Olive oil. 662
- 1709 Monteiro, Francisco Vaz, Ponte Sor, Portalegre.—Olive oil. 662
- 1710 Vasconcellos, Francisco Maria de, Sabugal, Guarda.—Olive oil. 662
- 1711 Vieira, Agostinho Jose, Sto. Ovidio, Porto.—Olive oil. 662
- 1712 Vassea & Coelho, Oporto.—Olive oil. 662
- 1713 Vasconcellos, Manuel S. Quaresma, Condeixa, Coimbra.—Olive oil. 662
- 1714 Veiga, Francisco Antonio, Goes, Coimbra.—Olive oil. 662
- 1715 Vasconcellos, Joaquim Guilherme de, Elvas, Portalegre.—Olive oil. 662
- 1716 Varella jr., Jose Gomes, Serpa, Beja.—Olive oil. 662
- 1717 Oliveira Manuel Joaquim de Sendin, Miranda do Douro.—Olive oil. 662
- 1718 Oliveira, Jose Duarte, Murca, Villa Real.—Olive oil. 662
- 1719 Valdez, Antonio de Campos, Alcacér do Sal, Lisbon.—Olive oil. 662
- 1720 Serpa, Francisco Lopes, Portalegre.—Olive oil. 662
- 1721 Moran, Jose Antonio Martins, Vianna do Alentejo.—Olive oil. 662
- 1722 Osorio, Manuel de Azevedo Ferrao, Monforte, Castello Branco.—Olive oil. 662
- 1723 Leitao, Joas Paes d'Almeida, Sattam, Visen.—Olive oil. 662
- 1724 Leite, Jeronymo Augusto Pereira, Cavez, Braga.—Olive oil. 662
- 1725 Loio, Gaspar, da Silva, Armamar, Viseu.—Olive oil. 662
- 1726 Lobo, Jose Maria, Guarda.—Olive oil. 662
- 1727 Neves, Filho, Adelino St. Antonio dos Oliveira, Coimbra.—Olive oil. 662
- 1728 Negrão, Manuel Nicolau Osorio, Ansedo, Oporto.—Olive oil. 662
- 1729 Pinto, Antonio Thomas da Costa, Bibalonga, Braganca.—Olive oil. 662
- 1730 Pereira, Jose Sebastiao Martins, S. Thiago, Coimbra.—Olive oil. 662
- 1731 Lima Meyer & Sons, Lisbon.—Olive oil. 662
- 1732 Mendes, Raymundo Jose Soares, Abrantes, Santarem.—Olive oil. 662
- 1733 Mourato, Mathias, Alpalao, Portalegre.—Olive oil. 662
- 1734 Kempe, Guilherme, Lisbon.—Olive oil. 662
- 1735 Mendes, Casemiro Esteves, Aviz, Portalegre.—Olive oil. 662
- 1736 Mocinha, Manuel Jeronymo, Campo Maior, Portalegre.—Olive oil. 662
- 1737 Moraes, Jose Barzillo, Arronches, Portalegre.—Olive oil. 662
- 1738 Lima, Andre Avelino de, Cano, Portalegre.—Olive oil. 662
- 1738a Abrantes, Viscount da A., Santarem.—Olive oil. 662
- 1738b Chicorro, Andre G., Monforte, Portalegre.—Olive oil. 662
- 1739 Lobo, Thomas Antonio de Araujo, Oporto.—Olive oil. 662
- 1740 Souza, Jose Antonio Nunes de, Covilha, Castello Branco.—Olive oil. 662
- 1741 Senna Bello, Manuel Thomar de, Guarda.—Olive oil. 662
- 1742 Silva, Jose Nunes, Elvas, Portalegre.—Olive oil. 662
- 1743 Mello, Higino O. de, Querosa, Santarem.—Olive oil. 662
- 1744 Azevedo, Marianno de Lemos, Villa Nova de Ourem, Santarem.—Olive oil. 662
- 1745 Araujo, Antonio Joaquim de, Thomar, Santarem.—Olive oil. 662
- 1746 Almeida, Antonio Mendes, Alcacér do Sal, Lisbon.—Olive oil. 662
- 1747 Almeida, Sebastiao Saldanha de, Portalegre.—Olive oil. 662
- 1748 Bentes, Ignacio Jose, Serpa, Beja.—Olive oil. 662
- 1749 Cardozo, Antonio Augusto Correa da Silva, Cellorico, Guarda.—Olive oil. 662
- 1750 Castello Branco, Joao da Silva Ferrao de, Villa Franca, Lisbon.—Olive oil. 662
- 1751 Domingues, Victorino Jose, Faro.—Olive oil. 662
- 1752 Duarte, Egydio Jose, Castello de Vide, Portalegre.—Olive oil. 662

## Animal and Vegetable Products, Textile Substances.

- 1753 Freire, Jose Luis Ferreira, Lagos, Coimbra.—Olive oil. 662
- 1754 Fernandes, Justiniano Jose, Mirandella, Braganca.—Olive oil. 662
- 1755 Figueiredo, Joao Ferreira de, Villa Flor, Braganca.—Olive oil. 662
- 1756 Ferrenda, Ildefonso Nunes, Valdigem, Viseu.—Olive oil. 662
- 1757 Freixedas, Eduardo, Castello de Vide, Portalegre.—Olive oil. 662
- 1758 Guimaraes, Manuel Antonio da Costa, Mirandella, Braganca.—Olive oil. 662
- 1759 Guerra, Thomas Ignacio de Meirelles, Moncorvo, Braganca.—Olive oil. 660
- 1760 Gomes, Joao Manuel, Portalegre.—Olive oil. 662
- 1762 Gama, Jose Augusto Sanches, Coimbra.—Olive oil. 662
- 1763 Gama, Joao Cardoso Lemos da, Casa Branca, Portalegre.—Olive oil. 662
- 1764 Grillo, Manuel Francisco, Ribeira de Nisa, Portalegre.—Olive oil. 662
- 1766 Blanco, Andre Faustino Peres, Aldeia Nova, Beja.—Olive oil. 662
- 1767 Campos, Antonio d'Aranjo Juzarte de, Portalegre.—Olive oil. 662
- 1768 Aviles, Count of, Portalegre.—Olive oil. 662
- 1769 Carvalho, Joao Augusto, Portalegre.—Olive oil. 662
- 1770 Carvalho, Eusebio Nobre de, Lisbon.—Olive oil. 662
- 1771 Costa, Manuel Joaquim, Portalegre.—Olive oil. 662
- 1772 Calheiros, Luis d'Oliveira, Lisbon.—Olive oil. 662
- 1773 Carvalho, Joao Antonio de, Porto de Moz, Leiria.—Olive oil. 662
- 1774 Castro, Antonio Maria Queiroz de Mello e, Frozoeira, Ferreira do Zezere, Santarem.—Olive oil. 662
- 1775 Figueiredo, Jose Paulo Teixeira de, Matheus, Villa Real.—Olive oil. 662
- 1776 Fernandes, Joaquim Pinto, Campello, Oporto.—Olive oil. 662
- 1777 Falcao, Maximo, Asinhaga, Santarem.—Olive oil. 662
- 1778 Fernandes, Joaquim, Mogao, Santarem.—Olive oil. 662
- 1779 Ferreira, Jose Maria, Chamusca, Santarem.—Olive oil. 662
- 1780 Ferreira, Joaquim da Motta, Rio Maior, Santarem.—Olive oil. 662
- 1781 Figueira, Manuel Duarte, Castello Branco.—Olive oil. 662
- 1782 Ferreira, Joaquim Jose, Elvas, Portalegre.—Olive oil. 662
- 1783 Falcao, Joao Carlos da Costa, Fundao, Alcaide, Castello Branco.—Olive oil. 662
- 1785 Escobar, Hermenegildo, Portalegre.—Olive oil. 662
- 1786 Inchado, Jose Antonio Dias, Moura, Portalegre.—Olive oil. 662
- 1788 Deus, Joao Rodrigues de, & Co., Torres Novas, Santarem.—Olive oil. 662
- 1789 Vieira, Agostinho Jose, Sto. Ovidio, Oporto.—Olive oil. 662
- 1791 Teixeira, Carlos Augusto, Graciosa, Lisbon.—Olive oil. 662
- 1792 Tavares, Antonio Jose, Covilha, Castello Branco.—Olive oil. 662
- 1793 Tierno, Simeon, Elvas, Portalegre.—Olive oil. 662
- 1794 Teixeira, Manuel Maria, Mirandella, Braganca.—Olive oil. 662
- 1795 Xavier, Manuel Camillo, Benavente, Santarem.—Olive oil. 662
- 1796 Yuquete, Jose de Oliveira, Leiria.—Olive oil. 662
- 1797 Leal, A. Goncalves da Matta, Castanheira.—Olive oil. 662
- 1798 Mello, Joaquim Jose de, Pampilhosa, Aveiro.—Olive oil. 662

## Textile Substances of Vegetable or Animal Origin.

- 1799 Sarmento, Antonio Ferreira, Vianhaes, Braganca.—Flax. 666
- 1800 Silva, Domingos d'Almeida e, S. Mamede, Oporto.—National flax. 666
- 1801 Sencadas, Manuel Gomes Moreira, Amorim, Oporto.—Flax. 666
- 1803 Louza, Augusto Pereira d'Abreu, Sta. Marinha, Villa Real.—Flax. 666
- 1803 Pygnatelli, Jose da Cunha, Guarda.—Flax. 666
- 1804 Cavadas, Jose da Silva, S. Mamede, Oporto.—Flax. 666
- 1805 Mattos, Rita de, Ponta Delgada.—Linen in various stages of preparation. 666
- 1806 Castello, Antonio de Gouvea Rebello, Sernache, Viseu.—Flax. 666
- 1807 Souto, Antonio Duarte da Cunha, Freixinho, Viseu.—Flax. 666
- 1809 Rodrigues, Joaquim, Oporto.—Combed flax. 666
- 1810 Queiroz, Joaquim Carneiro Leao, Meixomil, Oporto.—Flax. 666
- 1811 Queiroz, Jose de Sequeira Pinto, S. Sebastiao do Duque, Vianna do Castello.—Flax. 666
- 1814 Almeida, Joaquim Ribeiro, Campanha, Oporto.—Flax. 666
- 1815 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Flax. 666
- 1816 Administrator of the Counsellor of Alentem, Alentem, Oporto.—Flax. 666
- 1817 Almeida, Manuel d', Gafanha, Viseu.—Flax. 666
- 1818 Coelho, Jose Justino, Villa do Tamega, Villa Real.—Flax. 666
- 1819 Carvalho, Joaquim Augusto da Silveira, Penafiel, Porto.—Flax. 666
- 1820 Costa, Manuel Jorge da, Valongo, Oporto.—Flax. 666
- 1821 Cadaval, Francisco de Sousa, Villa Nova da Cevreria, Vianna do Castello.—Flax. 666
- 1822 Moraes, Antonio da Silva, Sardoal, Santarem.—Flax. 666
- 1823 Matta, Anacleto da Fonseca, Sardoal, Santarem.—Hemp. 666
- 1824 Silva, Jose Diogo da, Lisbon.—Wool. 666



Textile Substances.

- |   |     |  |     |
|---|-----|--|-----|
| 1826 Saraiva, Francisco Martins, Belmonte, Castello Branco.                               |     | 1854 Silva, Antonio Lopes da, Balasar, Oporto.                                   |     |
| a Flax.   | 666 | a Flax.  | 666 |
| b Wool.   | 667 | b Wool.  | 667 |
| 1827 Basto, Manuel Jose Teixeira, S. Miguel de Refoyos, Braga.—Flax.                      | 666 | 1855 Santos, Ascencio Jose dos, Valenca, Vianna do Castello.                     |     |
| 1828 Pimentel, Jose Reis, Castello de Vide, Portalegre.—Flax.                             | 666 | a Flax.  | 666 |
| 1829 Freitas, Jose Monteiro de, Camello, Oporto.—Flax.                                    | 666 | c Wool.  | 667 |
| 1830 Ferreira, Joao Dias, Vallongo, Oporto.—Flax.   | 666 | 1856a Rosa, Jose da Graca Pereira, Niza, Portalegre.—Wool.                       | 667 |
| 1831 Frausto, Leandro Pinto, Marvao, Portalegre.—Flax.                                    | 666 | 1856b Sarmento, Manuel Gomes de, St. Estevao, Villa Real.—Wool.                  | 667 |
| 1832 Franco, Joao, Povoa de Meadas, Portalegre.—Flax.                                     | 666 | 1856c Souza, Manuel Lopes de, Guarda.—Wool.                                      | 667 |
| 1833 Guerra, Thomas Ignacio de Mairalles, Moncorvo, Braganca.—Flax.                       | 666 | 1857 Piteira Fernandez, Joaquim Filipe, Reguengo, Evora.—Wool.                   | 667 |
| 1834 Gama, Manuel Telles da, Lisbon.—Wines.   | 660 | 1857a Sardinha, Joao Maria da Silva, Monforte, Portalegre.—Wool.                 | 667 |
| 1835 Gomes, Antonio Luis, Valenca, Vianna do Castello.—Flax.                              | 666 | 1858 Pinto, Antonio Mascarade, Villa Boim, Portalegre.—Wool.                     | 667 |
| 1836 Guerreiro, Antonio Manuel, Villa Nova da Cerveira, Vianna do Castello.—Flax.         | 666 | 1858a Silva, Jose Diogo da, Lisbon.—Wool.  | 667 |
| 1837 Vieira, Pedro Martins, Cabeceiras de Basto, Braga.—Flax.                             | 666 | 1859 Pimenta, Isidoro E. O. C. Margues, Villa Boim, Portalegre.—Wool.            | 667 |
| 1838 Torres, Antonio Alves, Arcos, Oporto.—Flax.  | 666 | 1860 Pereira, Jose Francisco, Castello de Vide, Portalegre.—Wool in the fleece.  | 667 |
| 1839 Moreira, Joao Baptista, Rates, Oporto.—Flax.   | 666 | 1861 Pereira, Jeronymo, Serpa, Beja.—Wool.                                       | 667 |
| 1840 Machado, Manuel Barcellos, Viseu.—Flax.  | 666 | 1862 Pimentel, Jose Reis, Povoa de Meadas, Portalegre.—Wool.                     | 667 |
| 1841 Soveral, Victorino da Costa, Mondim de Basto.—Flax.                                  | 666 | 1863 Continho, Fernando Afonso d'Almeida, Sepins, Coimbra.—Wool.                 | 666 |
| 1842 Leite, Luis Maria Felgueiras, Mogadouro, Braganca.—Hemp.                             | 666 | 1864 Pimentel, Antonio Augusto de Moraes, Castello Branco, Braganca.—Wool.       | 667 |
| 1843 Leal, Manuel da Cunha, Sobreira, Oporto.—Flax.                                       | 666 | 1865 Couraca, Jose de Gouvea, Faia, Viseu.—Wool.                                 | 667 |
| 1844 Nogueira, Francisco Bento, Paredes de Coura, Vianna do Castello.—Flax.               | 666 | 1866 Rio, Antonio Manuel, Miranda do Douro, Braganca.—Wool.                      | 665 |
| 1845 Pedrosa, Maria Jose Lopes, Lavos, Coimbra.—Flax.                                     | 666 | 1867 Montoya, Diogo Lopes, Castello Branco.—Wool.                                | 667 |
| 1846 Mattos, Rosa de, Island of St. Michaels, Ponta Delgada.—Flax, hemp, and hemp-thread. | 666 | 1868 Murteira, Manuel Maria, Campo Maior, Portalegre.—Wool.                      | 667 |
| 1847 Mesquita, Pedro Jose de, Sinda, Coimbra.—Flax.                                       | 666 | 1869 Lacerda, Antonio Augusto de, Choriindo, Viseu.—Wool.                        | 667 |
| 1848 Leite, Antonio Bernardo d'Oliveira, Cabeceiras de Basto, Braga.—Flax.                | 666 | 1870 Costa, Lourenco Justiniano da Fonseca, Oliveira do Hospital, Coimbra.—Wool. | 667 |
| 1849 Mendes, Luis Antonio Soares, Castello Branco.—Flax.                                  | 666 | 1871 Calca e Pina, Antonio, Souzel, Portalegre.—Wool.                            | 667 |
| 1850 Fernandes, Manuel Ignacio, Tellos, Villa Real.                                       |     | 1872 Lecocq, Joao Jose, Castello de Vide, Portalegre.—Wool.                      | 667 |
| a Flax.   | 666 | 1873 Pera, Francisco Marcos, Miranda do Douro, Braganca.—Wool.                   | 667 |
| b Wool.   | 667 | 1874 Pascual, Eduardo Augusto, Meixomil, Oporto.—Wool.                           | 667 |
| 1851 Montenegro, Joao Joaquim Pereira Telles de Menezes Morellos, Vianna do Castello.     |     | 1875 Lemos, Francisco Antonio Pereira, Villarelllos, Braganca.—Wool.             | 667 |
| a Flax.   | 666 | 1876 Marcal & Bro., Portalegre.—Wool unwashed and washed.                        | 667 |
| b Wool.   | 667 | 1877 Oliveira Soares, M. E. de, Evora.—Wool.                                     | 667 |
| 1852 Raposo, Luis, Miranda do Douro, Braganca.  |     | 1878 Villar, Manuel Pereira, Torroso, Oporto.—Wool.                              | 667 |
| a Flax.   | 666 | 1879 Carneiro, Jose Antonio, Santa Eulalia, Portalegre.—Wool.                    | 667 |
| b Wool.   | 667 | 1880 Casqueiro, Jose Maria, Crato, Portalegre.—Wool.                             | 667 |
| 1853 Magalhaes, Francisco T., Sinda, Coimbra.   |     |  |     |
| a Flax.   | 666 |  |     |
| b Wool.   | 667 |  |     |

## Textile Substances, Engineering and Administration.

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|---|---|
| <p>1881 O. veira, Domingos Manuel, Miranda do Douro, Braganca.—Wool. 667</p> <p>1882 Vasconcellos, Bartholomeu d'Aragao Costa Tavares de, Fundao, Castello Branco.—Wool. 667</p> <p>1883 Miranda, Antonio Augusto Lobo de, Lagos, Faro.—Wool. 667</p> <p>1884 Bogalho, Joao Joaquim, Villa, Boim.—Wool. 667</p> <p>1885 Bello, Francisco Severianno Carilho, Castello de Vide, Portalegre.—Wool in the fleece. 667</p> <p>1886 Coelho, Luis Pires, Sardoal, Santarem.—Wool. 667</p> <p>1887 Guimaraes, Victorino Barbosa, Penafiel, Oporto.—Wool. 667</p> <p>1888 Miguelis, Joao, Ilhavo.—Wool. 667</p> <p>1889 Castel Branco, Francisco Barreto Caldeira, Portalegre.—Wool. 667</p> <p>1890 Falcao, Lazaro Domingos, Pova, Braganca.—Wool. 667</p> <p>1891 Geraldies, Manuel Vas Preto, Louza, Castello Branco.—Wool. 667</p> <p>1892 Veiga, Jose d'Almeida, Anciaes, Braganca.—Wool. 667</p> <p>1894 Costa, Joao Carlos, Elvas, Portalegre.—Wool. 667</p> | <p>1895 Cid, Jose Ignacio, Mirandella Braganca.—Wool. 667</p> <p>1896 Central Commission of the District of Viseu, Viseu. 667<br/>a Wool. 668<br/>b Silk balls. 668</p> <p>1897 Nunes, Antonio Manuel, Chacim, Braganca.—Raw silk. 668</p> <p>1898 Franqueira, Romao, Carrazede, Braganca.—Cocoons. 668</p> <p>1899 Cabral, Paco F., &amp; Sons, Sernancthe, Viseu.—Cocoons and raw silk. 668</p> <p>1900 Silk Manufacturing Company, Egyptiense, Oporto.—Silk balls. 668</p> <p style="text-align: center;"><b>Agricultural Engineering and Administration.</b></p> <p>1901 Rocha &amp; Co., Lisbon.—Artificial guano. 681</p> <p>1902 Abattoir of Lisbon, Alcantara, Lisbon.—Artificial manures. 681</p> <p>1904 Phosphorite Company, Marvensi, Lisbon.—Phosphate of lime. 681</p> <p>1905 Board of Public Forests, Lisbon.—Garden tools. 700</p> |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## TURKEY.

(NOTE.—*The Agricultural Exhibit of Turkey is installed in the Main Building, and catalogued in that volume.*)

## RUSSIA.

(West of West Aisle, Columns 12 to 15.)

## Arboriculture, Pomology, Agricultural Products.

## Arboriculture and Forest Products.

- 1 Sidoroff, Michael, St. Petersburg.—  
Larch wood, larch and cedar strobils. 600
- 2 Verekha, Peter, St. Petersburg.  
a Wild-growing trees; collection of sections. 600  
b Statistical map of forests (Russia in Europe). 606
- 3 Ostrom Bros., Uleaborg, Finland.—  
Willow bark, tanning material. 602
- 4 Matteissen, Nicolas, Moscow.—Gall-nuts. 602
- 5 Wagner, Charles, Riga.—Fir and pine tree seeds. 605
- 6 Russian Society of Forestry, St. Petersburg.—Seeds of forest-growing trees. 605

## Pomology.

- 8 Imperial Russian Horticultural Society, St. Petersburg.—Reproduction of apples growing on the island of Walaam, on the Ladogalake. 610

## Agricultural Products.

- 9 Egert, John von Henziany, Government of Warsaw, District of Radimmin.—Oats, barley, in grain and sheaves. 620
- 10 Dengink, Henrietta, Kishineff, Bessarabia.—American maize. 620
- 11 Bessarabian Horticultural School, Kishineff.  
a Bessarabian wheat, maize, and Indian millet. 620  
b Linseed and sunflower seed. 624
- 12 Bell, David, Alexandrovskaya Farm, near St. Petersburg.—Wheat, rye, barley, oats, and timothy grass-seed. 620
- 13 Novossiltseff, John, Voin, Government of Orel.—Rye, barley, oats, red clover, rape, and tares. 620
- 14 Firsoff, George, Michalafskoe, Government of Voronezh, District of Ostrogoisk.—Wheat and oats. 620
- 15 Penzin, John, Samara.—Wheat. 620
- 16 Plighin, Philip, Volks, Government of Saratoff.—Wheat. 620
- 17 Shatilloff, Joseph, Mokhovoe, Government of Toola, District of Novossil.—Wheat, rye, barley, and oats in grains and sheaves. 620
- 18 Stichinsky, Simon, Gololobovo, near Voronezh.—Wheat and oats. 620
- 19 Vassiltchikoff, Prince Victor, Troobetchino, Government of Tambow, District of Lebedian.—Wheat, rye, and oats. 620
- 20 Warschafsky, A., St. Petersburg.—Wheat, rye, and oats. 620

- 21 Wickberg, Charles, Sederkylla, Finland, Government of Nyland.—Wheat, rye, barley, and timothy grass-seed. 620
- 22 Grotenfeld, Nicolas, Finland, St. Michael.—Buckwheat. 620
- 23 Ermoloff, Alexis, Archangelakoe, near Voronezh.  
a Wheat, oats, peas. 620  
b Timothy and French grass-seeds. 624
- 24 Institute of Agriculture & Forestry, New Alexandria, Government of Lublin, District of Alexandrovsk.—Wheat. 620
- 25 Pastrzembaky, Stanislas, Yurkou and Dembiany, Government of Kielce, District of Pintihow.—Wheat, rye, peas, millet, barley, and oats. 620
- 26 Kazan Model Farm.—Wheat, rye, oats, timothy grass, clover, tares, and cornspurry seed. 620
- 27 Karamysheff, Nicolas, Polossy, Government of Pskoff, District of Porkhoff.—Wheat, rye, and oats. 620
- 28 Korf, Baron Michael, Selso, near St. Petersburg.—Wheat, rye, barley, and oats. 620
- 29 Krapotkine, Prince Demetrius, Kabylyno, Government of Riazan, District of Riask.  
a Samples of wheat and buckwheat. 620  
b Peas. 621
- 30 Labenski, W., Okence, Government and District of Warsaw.—Wheat and rye. 620
- 31 Levchine, Theodore, St. Petersburg.—Wheat. 620
- 32 Maltzoff, Michael, Nikolaevsk, Government of Samara, Belotoorka.—Wheat. 620
- 33 Mariynska Model Farm, near Saratoff.—Samples of cereals. 620
- 34 Gorki Model Farm, Government of Moghileff.—Wheat and rye in grain and sheaves. 620
- 35 Petrovski Rural Academy Model Farm, near Moscow.—Wheat, rye, barley, and oats. 620
- 36 Mookhin, John, Moscow.—Red clover, timothy grass, white and black tares. 620
- 37 Nostitz, Count John, Government of Ekaterinow, District of Novo, Moskovsk.—Red wheat and barley. 620
- 38 Obratnoff, Paul, Uralsk.—Summer wheat. 620
- 39 Odessa Exchange Committee, Odessa.—Wheat, rye, barley, maize, and millet. 620
- 40 Ookhin Brothers, Pokrovskoe, Government of Samara, District of Novo, Ovzen.—Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Agricultural, Animal, and Vegetable Products, Fish Culture.

- 41 Petrovski, Michael, Stady, Government of Radom, District of Sandomir.—Wheat. 620
- 42 Pleshanoff, John, Samara.—Wheat. 620
- 43 Zablotskf-Dessetovsky, Paul, Krymki, Government of Kieff, District of Tchigirin.
  - a Red wheat. 620
  - b Leaf tobacco. 623
  - c Comline and beet seed. 624
- 44 Zakrzewsky, Felix, Staro, Government of Warsaw, District of Gostynin.—Wheat in grain and sheaves. 620
- 45 Odessa Exchange Committee.—Peas and French beans. 621
- 46 Mariynska Model Farm, near Saratoff.—Common and French beans. 621
- 47 Levchine, Theodore, St. Petersburg.
  - a Peas. 621
  - b Rape seed. 624
- 49 Deugink, Henrietta, Kishineff, Bessarabia.—Pearl lentils. 621
- 50 Bessarabian Agricultural School, Kishineff.—Sweet French beans, white and red. 621
- 51 Dooroontcha, Sadook, Krementchoog, Government of Poltarvo.—Tobacco and cigarettes. 623
- 52 Doonaieff, Nicephore, Moscow.—Tobacco and cigarettes. 623
- 53 Aemoloff & Co., Basil, Rostaff on the Don.—Tobacco and cigarettes. 623
- 54 Abramoff, Moscow.—Tobacco and cigarettes. 623
- 55 Dooroontcha, Moshe, Paltawa.—Tobacco and cigarettes. 623
- 56 Kooshnareff, James, Rostaff on the Don.—Tobacco and cigarettes. 623
- 57 Kraft Brothers, Alexander & Oswald, St. Petersburg.—Tobacco, cigars, and cigarettes. 623
- 58 Laferme, St. Petersburg.—Tobacco and cigarettes. 623
- 60 Rymarenko, Martha, Moscow.—Leaf tobacco. 623
- 61 Petroff Bros., St. Petersburg.—Leaf tobacco. 623
- 62 Philitis, Stephen, Moscow.—Tobacco and cigarettes. 623
- 63 Mylnikoff & Zasobrin, Irkootsk.—Tobacco and cigars. 623
- 64 Matteisson, Nicolas, Moscow.—Bell pepper. 623
- 65 Weiss, C.A., Riga.—Roasted chicory-root. 623
- 66 Pykhoff Brothers, Rostaff, Government of Faroslow.—Chicory-root roasted. 623
- 67 Meyer, L., St. Petersburg.—Fig-coffee, and chocolate. 623
- 68 Hofmark, Bruno, St. Petersburg.—Chicory-root, roasted and ground. 623
- 69 Harman, G. W., Rija.—Chicory-root raw and roasted. 623
- 70 Maximoff, Basil, Zagorie, Government of Kostroma, District of Nevekhta.—Bohemian hops. 623
- 71 Kharkoff Model Farm.—Bohemian hops. 623
- 73 Tzytsoorin, Theodore, St. Petersburg.—Leaf tobacco. 623
- 74 Sokoloff, John, St. Petersburg.—Tobacco, cigars, and cigarettes. 623
- 75 Saatchi & Mangoobi, St. Petersburg.—Tobacco and cigarettes. 623
- 77 Zapevaloff, Alexander, St. Petersburg.—Kitchen-garden plants and seeds. 624
- 78 Waag & Sons, Doobovka, Government of Saratoff.—Mustard-seed. 624
- 79 Vassiltchikoff, Prince Victor, Troobetchino, Government of Tamboff, District of Lebedian.—Beet and timothy grass-seeds. 624
- 80 Ritter, Leopold, Moscow.—Collection of kitchen-garden plants seeds. 624
- 81 Repnin, Prince, Nicolas, Fagotin, Government of Poltawo, District of Piratin.—Linseed. 624
- 82 Pleshanoff, John, Samara.—Linseed. 624
- 83 Abratnoff, Paul, Uralak.—Linseed. 624
- 84 Müller, Christian, Doobovka, Government of Saratoff, District of Tzarina.—Mustard seed. 624
- 85 Mariynska Model Farm, near Saratoff.—Hemp and poppy seed. 624
- 87 Karamycheff, Eugene, Toriok, Government of Tver.—Linseed. 624
- 88 Gratcheff, E., St. Petersburg.—Grains and vegetables. 624
- 89 Dookhinoff Brothers, St. Petersburg.—Linseed. 624

## Water Animals, Fish Culture, and Apparatus.

- 91 Sidoroff, Michael, St. Petersburg.—Fish from the Northern Ocean. 641
- 92 Mangold, Charles, St. Petersburg.—Preserved fish. 641
- 93 Sokoloff, Nicolas, St. Petersburg.—Isinglass and viazingo. 646
- 94 Schultz, Alexander, Astrakhan.—Isinglass and viazingo. 646
- 96 Matteisson, Nicolas, Moscow.—Isinglass. 646

## Animal and Vegetable Products.

- 97 Odnoshefsky, M., & Sons, St. Petersburg.—Furs, sable, blue fox, etc. 659
- 98 Ulich, Gustavus, Warsaw.—Albumen, dried blood, and blood extract. 659
- 99 Sivokhin, E., St. Petersburg.—Honey. 654
- 100 Berlinski, George, Warsaw.—Prepared French mustard. 656
- 101 Chief Intendancy of War, St. Petersburg.—Preserved meat and vegetables. 656
- 102 Yacovieff, John, St. Petersburg.—Preserved greens and mushrooms. 656
- 103 Sivokhin, E., St. Petersburg.—Preserved greens and mushrooms. 656
- 104 Semenkoff, Victor, Oostie, Government of Velogda.—Meat extract. 656
- 105 Sidoroff, Michael, St. Petersburg.—Salt reindeer tongues from the island of Nova Zembla. 656

Animal and Vegetable Products.

- 106 Nikitin, Alexander, Smolensk.—Fruit preserves. 656
- 107 Mangold, Charles, St. Petersburg.—Preserved meats. 656
- 108 Ninberg, Otto, Uleaborg, Finland.—Preserved game. 656
- 109 Likhonin, Gregory, St. Petersburg.—Cranberry juice condensed by freezing. 656
- 110 Foorkhin, Paul, St. Petersburg.—Fruit paste (pastila). 656
- 111 Martens, Julius, St. Petersburg.—Coffee extract, dry and liquid. 656
- 112 Company for the Supply of Food, Varonesh and Moscow.—Preserved meat and vegetables for the army. 656
- 113 Petroff, John, St. Petersburg.—Cranberry juice. 656
- 114 Abrikosoff's Sons, Moscow.—Preserves, marmalade, fruit-paste. 656
- 115 Stephany, F., Mitau.—Wheat-flour. 657
- 116 Waag & Sons, Doobovka, Government of Saratoff.  
a Mustard-flour, decorticated mustard-seed and husks. 657  
b Mustard-seed oil and cake. 662
- 117 Verevitin, Alexis, Mzensk, Government of Orel.—Wheat-flour and decorticated grain. 657
- 118 Taldykin, Catherine, Eletz, Government of Orel.—Wheat-flour and decorticated grain. 657
- 119 Müller, Christian, Doobovka, Government of Saratoff, District of Tzaritsin.  
a Mustard-flour, decorticated seed and husks. 657  
b Mustard-seed oil and cakes. 662
- 120 Matteissen, Nicolas, Moscow.—a Flour and groats. 657  
b Anise and mustard seed oil. 662
- 122 Golikoff, K. P., Pritzsch, Government of Riazan, District of Spassk.—Starch and glycose. 658
- 123 Tarnoosky, Basil, Parafievka, Government of Tchernigoff, District of Berzna.—Raw sugar. 659
- 124 Galitsyn, Prince Victor, Slavgorod, Kharkoff, District of Akhtyvk.—Raw beet-root sugar. 659
- 125 Hermanoff Sugar Manufacturing Company, Government of Warsaw.—Refined sugar in loaves and crystallized. 659
- 126 Gnevan Sugar Manufacturing Company, Government of Warsaw.—Refined sugar. 659
- 127 Wassilitchikoff, Prince Victor, Troobetchina, Government of Tamboff, District of Lipetz.—Raw beet-root sugar. 659
- 128 Warsaw Sugar Manufacturing Company, Warsaw.—Refined sugar. 659
- 129 Sokolovka Sugar Manufacturing Company, Government of Podolia, District of Olgopol.—Refined beet-sugar. 659
- 130 Ostroff Sugar Manufacturing Company, Warsaw.—Sugar refined. 659
- 131 Sergeieff, Alexis & Apraxin, Count John, Pensa.—Refined beet-root sugar. 659
- 132 Nathanson, Jacob, Warsaw.—Sugar refined. 659
- 133 Miodzescin Sugar Mill, Government of Warsaw.—Sugar refined in loaves and powder. 659
- 134 Meck, Charles von, Brailovka, Government of Podolia, District of Vinnytsa.—Beet-root sugar, raw and refined. 659
- 135 Lanin, Nicolas, Moscow.—Fruit syrups and juices, effervescent fruit liquors and mineral waters. 659
- 136 Kümens, Richard, Sobolevka & Tsharnomin, Government of Podolia, District of Gaisin.—Sugar, raw and refined. 659
- 137 Krasinec Sugar Mill Company, Government of Plock.—Sugar. 659
- 138 Keshner, Frederic, St. Petersburg.—Refined beet-root sugar. 659
- 139 Yoozefow Sugar Manufacturing Company, Government of Warsaw.—Refined sugar. 659
- 140 Goosov Sugar Manufacturing Company, Government of Warsaw.—Refined sugar. 659
- 141 Dobrozelsky Sugar Manufacturing Company, Government of Warsaw.—Sugar, raw and refined. 659
- 142 Maizner, N. Lanenta, & Fzabelin, Sugar Mills, Government of Warsaw.—Beet-root sugar, raw and refined. 659
- 143 Lysckowice Sugar Manufacturing Company, Government of Warsaw.—Refined sugar. 659
- 144 Leonoff Sugar Manufacturing Company, Government of Warsaw.—Beet-root sugar, refined. 659
- 145 Paskevitch, F., Soodak, Crimea.—Wine. 660
- 146 Doolvetoff, David, Simpheropol, Crimea.—White wine. 660
- 147 Imperial Nikitsky Garden, Yalta, Crimea.—White and red wine. 660
- 148 Foondocley, John, Goorsoof District, Yalta, Crimea.—Wine. 660
- 149 Kniajevitch, Antoine, Alushta, Crimea.—Crimean wine. 660
- 150 Lancki, Robert, Soodack, Crimea.—Red and white wine. 660
- 151 Lanin, Nicolas, Moscow.—Liquors. 660
- 152 Hartwig, Herman, Malo Danilof brewery near Kharkoff.—Beer, mead, and malt. 660
- 153 Worontzoff, Prince Simon, Massandra, Crimea.—Red and white wines. 660
- 154 Bashmakoff, S. D., St. Petersburg.—Spirits and liquors. 660
- 155 Desharlot, A., Moscow.—Spirits, cordials, and liquors. 660
- 156 Makaroff, Petrus, Tiflis.—Kakhetian wine, red and white. 660
- 157 Rajevski, Nicolas, Crimea district, Yalta.—Wines. 660
- 158 Briantzeff, Victor, Irkoutsk.—Cordials and liquors. 660
- 159 Fokrath & Co., St. Petersburg.—Cordials and liquors. 660
- 160 Grevsmül, Alexander, Moscow.—Spirits. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Animal and Vegetable Products, Textile Substances.

- 161 Grote, Alexander von, Lemberg, near Riga.—Cumin liqueur. 660
- 162 Korf, Baron K., St. Petersburg.—Spirits and liquors. 660
- 163 Karali, G. N., & Co., St. Petersburg.—Cordials, liquors, and spirits. 660
- 164 Kalashnikoff, Peter, Pskoff.—Spirits, cordials, and liquors. 660
- 165 Tankowski, T., Warsaw.—Cordials and liquors. 660
- 166 Scheierman & Co., Riga.—Vinegars. 660
- 167 Lutoslavski, T., Drosdovo, Government & District of Lomza.—Bottled beer. 660
- 168 Krause, W., Warsaw.—Beer. 660
- 169 Tigzem Brewery Company, near Riga.—Malt extract. 660
- 170 Doordin, John, St. Petersburg.—Beer. 660
- 171 Zyzykin, M. Y., Brothers, Moscow.—Cordials, liquors, and artificial champagne. 660
- 172 Wickel, Y., Helsingfors.—Swedish punch. 660
- 173 Varaksin, Demetrius, & Sanin, George, Kazan.—Spirits and liquors. 660
- 174 Traverse, Marquis Alexander de Looga, Government of St. Petersburg.—Cordials and liquors. 660
- 175 Sternikovski, A., Warsaw.—Corn brandy and mead. 660
- 176 Smirnoff, Peter, Moscow.—Cordials, spirits, and liquors. 660
- 177 Rouget, Pauline, Moscow.—Cordials and liquors. 660
- 178 Petroff, W., St. Petersburg.—Spirits, cordials, and liquors. 660
- 179 Natus, T., & Co., St. Petersburg.—Spirits and liquors. 660
- 180 Martini, G., St. Petersburg.—Spirits, cordials, and liquors. 660
- 181 Lillieroth, Victor, Helsingfors.—Imperial and fruit punch. 660
- 182 Landrin, George, St. Petersburg.—Bonbons and chocolate. 661
- 183 Zaitzeff, Simon, Moscow.—Cakes and gingerbread. 661
- 184 Sivakhin, E., St. Petersburg.—Gingerbread. 661
- 185 Meyer L., St. Petersburg.—Gingerbread and bonbons. 661
- 186 Lapin, N. & A., Brothers, St. Petersburg.—Cakes, marmalade, chocolate, and confectionery. 661
- 187 Koodriavzeff, A. & G., Brothers, Moscow.—Sweetmeats and sugar candy. 661
- 188 Ootkin, Basil, Tver.—Cakes. 661
- 189 Belolipetzky, Michael, Toola.—Cakes. 661
- 191 Tzelikoff, Theodore, Moscow.—Vegetable oil and linseed oil cakes. 662
- 193 Zablotsky, Dessetovsky Paul, Kryniki, Government of Kieff, District of Tchigirin.—Camline seed oil. 662
- Textile Substances of Vegetable or Animal Origin.**
- 195 Agricultural Museum of the Ministry of Domains, St. Petersburg.—Samples of cotton and cotton seed grown in Turkestan, Central Asia. 663
- 196 Wishaw, Alfred, St. Petersburg.—Vologda flax. 666
- 197 Warachafsky, A., St. Petersburg.—Flax. 666
- 198 Repnin, Prince Nicolas, Fagotia, Government of Poltawo, District of Periatin.—Flax in different stages of preparation. 666
- 199 Pskoff Statistical Committee.—Flax from the Government of Pskoff. 666
- 200 Nemiloff, Anthony, Orel.—Hemp cleaned and uncleaned. 666
- 201 Maximoff, Basil, Zagorye, Government of Kostroma, District of Nerekhta.—Flax raw and clean. 666
- 202 Kazan Model Farm, Kazan.—Flax. 666
- 203 Karamysheff, Nicholas, Polossy, Government of Pskoff, District of Pskhoff.—Flax. 666
- 204 Karamysheff, Eugene, Torjok, Government of Tver.—Flax. 666
- 205 Gent & Co., Pskoff.—Flax. 666
- 206 Riga Exchange Committee, Riga.—Flax and hemp. 666
- 207 Cartau, Robert, Pskoff.—Flax. 666
- 208 Vassilief, Nicolas, Ovekque.—Flax, clean and half clean, flax tow. 666
- 209 Bykoff, Theodore, Vologda.—Flax. 666
- 210 Mariolaki, P., Rostoff on the Don.—Washed wool of the Russian Donskoy breed. 667
- 211 Stichinsky, Simon, Gololobovo, near Voronesh.—Wool in fleece. 667
- 212 Orloff, Nicolas, Repievka, Government of Saratoff, District of Balashoff.—Wool in fleece. 667
- 213 Warschafsky, A., St. Petersburg.—Wool, Rambouillet and Rambouillet Negretti breeds. 667
- 214 Moshevski, Wladislav, Odessa.—Wool of common Don breed. 667
- 215 Mariynska Model Farm, near Saratoff.—Wool in fleece. 667
- 216 Labensky, V., Okence, Government & District of Warsaw.—Sample of wool. 667
- 217 Karlovka Estate of H. F. H. the Grand Duchess Catharine Mihailovna, Government of Poltawo, District of Constantinograd.—Merino wool for carded and combed wool-stuffs. 667
- 218 Komarovsky, Count, Government & District of Orel.—Wool in fleece, Russian and Negretti breeds. 667
- 219 Glinka, Nicolas, Szczavin, Government of Lomza, District of Ostrolenka.—Wool. 667
- 220 Ganeshin Brothers & Co., Moscow.—Washed wool, Metis and Tzigai breed. 667
- 221 Fatz, Theodore, Olviopol, Government of Kherson.—Wool in fleece, Spanish breed. 667

Machines, Implements, Engineering, and Administration.

222 Falz, Fein, Edward, Kakhovka, Government of Tauride.—Washed and unwashed wool. 667

223 Baklanoff's, K. K., Sons, Moscow.—Washed wool, merino breed. 667

224 Pokrovsky Sisterhood of Charity, Moscow.—Cocoons of silk-worms, floss and raw silk. 668

225 Lootchinsky, Laurentius, Oaman, Government of Kief.—Cocoons, raw and floss silk. 668

226 Kozishnikoff, Peter, Veliki Oostioog, Government of Vologda.—Bristles. 669

Machines, Implements, and Processes of Manufacture.

227 Lilpop, Rau, & Loevenstein, Warsaw.

a Reaping-machine. 672

b Threshing-machine for corn and cloverseed. 673

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

228 Grubinsky, Florain, Warsaw.—Reaping-machine. 672

229 Benkovski, Albert, Warsaw.—Asparagus-digger. 672

230 Westberg, Nicholas, Kharkoff.—Threshing-machine. 673

231 Meshtcherin, John, Orel.—Winnowing and sorting machine. 673

233 Fvanoff, Alexander, Kharkoff.—Winnowing and sorting machines. 673

Agricultural Engineering and Administration.

234 Calcined Bone Manufacturing Company, St. Petersburg.—Ground bone and horn, and phosphatic manures. 681

235 Przeciszewsky, Constantine, Warsaw.—Pulverized bones for manure. 681

236 Borissovki, Peter, Moscow.—Apiary and artificial honey-comb. 683

## JAPAN.

*Location, South-west Corner of Agricultural Hall.***Arboriculture, Agricultural Products, Fish Culture.****Arboriculture and Forest Products.**

- 1 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.
- a Specimens of trees. 600
- b Dyewoods, barks, and galls. 602
- c Resins, etc. 603
- 2 Matsu-o, I., Tokio.—Bamboo. 601

**Agricultural Products.**

- 3 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.
- a Rice, millet, wheat, sorghum, Indian corn, etc. 620
- b Beans, peas, etc. 621
- c Teas, green and black. 623
- d Seeds. 624
- 4 Kaitakushi (Department for the Colonization of the island of Yesso).—Wheat. 620
- 5 Shirakawa-ken, Local Government of.—Tobacco leaves, cut and uncut. 623
- 6 Kagoshima-ken, Local Government of.—Tobacco leaves, cut and uncut. 623
- 7 Shiga-ken, Local Government of.—Tobacco leaves, cut. 623
- 8 Kiyoto, Municipality of, Kiyoto-fu.—Tobacco leaves, cut and uncut. 623
- 9 Osaka, Municipality of, Osaka-fu.—Tobacco leaves, cut and uncut. 623
- 10 Nagasaki-ken, Local Government of.—Cigars. 623
- 11 Saga-ken, Local Government of.—Tobacco. 623
- 12 Noda, D., Kumamoto, Province of Higo.—Tobacco leaves and cigars. 623
- 13 Kiriu-Kosho-Kuwaisha (First Japanese Manufacturing & Trading Company), Tokio.—Cigarettes and tea. 623
- 14 Susuki, S., Province of Hiuga.—Tea. 623
- 15 Kuroki, Y., Province of Hiuga.—Tea. 623
- 16 Otori, M., Province of Hiuga.—Tea. 623
- 17 Sato, S., Province of Hiuga.—Tea. 623
- 18 Womura, I., Province of Hiuga.—Tea. 623
- 19 Watanabe, M., Province of Hitachi.—Green tea. 623
- 20 Yebihara, Y., Province of Hitachi.—Green tea. 623
- 21 Katakura, J., Province of Hitachi.—Green tea. 623
- 22 Kuroda, N., Province of Higo.—Green tea. 623
- 23 Kamimura, N., Province of Higo.—Green tea. 623
- 24 Kaku, S., Province of Higo.—Green tea. 623
- 25 Fujita, H., Province of Higo.—Green tea. 623
- 26 Kobori, C., Province of Higo.—Green tea. 623
- 27 Hirano, H., Province of Higo.—Black tea. 624
- 28 Tanaka, K., Province of Chikugo.—Black tea. 623
- 29 Kawai, S., Province of Omi.—Green tea. 623
- 30 Maino, R., Province of Omi.—Green tea. 623
- 31 Hayashi, Y., Province of Tosa.—Green tea. 623
- 32 Morikawa, K., Province of Yetchi-zen.—Green tea. 623
- 33 Hori, G., Province of Iwami.—Tea. 623
- 34 Miura, G., Province of Mino.—Tea. 623
- 35 Miyazaki, T., Province of Hizen.—Green tea. 623
- 36 Sato, I., Province of Yetshigo.—Green tea. 623
- 37 Yanagida, K., Province of Yetshigo.—Black tea. 623
- 38 Imai, K., Province of Totomi.—Green tea. 623
- 39 Fukukawa, S., Province of Totomi.—Green tea. 623
- 40 Ozaki, I., Province of Suruga.—Green tea. 624
- 41 Minobe Chlubeye, Kiyoto.—Green tea. 623
- 42 Nagaya Buyemon, Kiyoto.—Tea. 623
- 43 Asada Toyemon, Kiyoto.—Green tea. 623
- 44 Kambayashi, Sansho & Sannin, Uji, Province of Yamashiro.—Tea; implements and apparatus used for the preparation. 623
- 45 Kiriu-Kosho-Kuwaisha (First Japanese Manufacturing and Trading Company), Tokio.—Tea. 623
- 46 Marunaka, M., Kanazawa, Province of Kaga.—Tea. 623

**Marine Animals, Fish Culture, and Apparatus.**

- 47 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce).—Tokio.
- a Shells. 645
- b Shagreen and sturgeon skins. 646

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.



## Animal and Vegetable Products, Textile Substances.

48 Kiri-Kosho-Kuwaisha (First Japanese Manufacturing & Trading Company), Tokio.—Nets, baskets, hooks, rods, lines, and other apparatus used for fishing. 647

49 Nagasaki-ken, Local Government of.—Fishing implement and apparatus. 647

## Animal and Vegetable Products.

50 Nagura, O., Kiyoto.—Vegetable isinglass. 650

51 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.

a Hides, furs, horns. 652

b Feathers of crane and pheasant. 653

c Preserved fruits prepared with sugar. 656

d Flour. 657

e Starch. 658

f Sugar. 659

52 Kumagai, K., Kiyoto.—Vegetable incense. 655

53 Kaitaku-shi (Department for Colonization of the Island of Yesso).—Preserved meat and fish. 656

54 City Chemical Laboratory, Kiyoto.

a Sugar candy. 659

b Mulberry wine, lemonade, punch, and other drinks. 660

55 Kamsaki, Tokio.—Sake, sweet liquors, spirits, and other alcoholic liquors. 660

56 Matsuya, H., Tokio.—Sweet liquors, wines, and malt liquors. 660

57 Sawada, Z., Tomo, Province of Bingo.—Sweet liquors. 660

58 Hashimoto, S., Tokio.—Spirits, sake, sweet liquors, and soy. 660

59 Kitakaze Yu, Hiogo, Province of Setzu.—Vinegars. 660

60 Naga-oka, Z., Tokio.—Soy and sweet liquors. 660

61 Mori, R. & K., Ito, Tokio.—Soy. 660

61a Nishi-wo Matsutaro, Kiyoto.—Yatsubashiyaki (kind of cracknel). 661

## Textile Substances of Vegetable or Animal Origin.

62 Government Cotton Factory, Sakai, Province of Setzu.—Cotton in raw state, and in all stages of preparation. 665

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

63 Maru, T., Province of Iwami.—Ramie, raw and prepared. 666

64 Hattori, Z., Province of Iwami.—China grass, spooled. 666

65 Asaya, T., Tokio.—Hemp, ramie, jute, etc. 666

66 Takamura, R., Province of Totomi.—Fibres. 666

67 Riu-kiu han, Loochoo Island.—Fibres of Musa-Basho, and China grass. 666

68 Kuwangiyo-Riyo-no-yosankakari (Government establishment for Experimental Silkworm-Breeding), Tokio.—Silk in cocoon and reeled. 668

69 Tamamura, Y., Ishi-i-mura, Province of Shimodzu.—Silk, reeled. 668

70 Marunako, M., Kanazawa, Province of Kaga.—Silk, reeled. 668

## Agriculture Engineering and Administration.

71 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.—Plows, scythes, harrows, and grain cradles. 670

## Ornamental Trees, Shrubs, and Flowers.

72 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce).

a Evergreen trees and shrubs. 700

b Herbaceous perennial plants. 701

c Lillies. 702

d Ornamental foliage. 703

e Ferns. 707

f New plants, with origin. 708

## Garden Tools, Accessories of Gardening.

73 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.—Fences, gates, etc. 722

## Garden Construction.

74 Miyagi, C., Garden laid out by. 733

# PHILIPPINE ISLANDS.

## Arboriculture, Pomology, Agricultural Products.

### Arboriculture and Forest Products.

- 1 Asuero, Eduardo, Province of Tarlac.—Dita bark. 600
- 2 Provincial Board, Province of Batangas.
  - a Peruvian Guaiacum bark. 600
  - b Maiden's hair. 604
- 3 Inspection-General of Woods and Forests.
  - a Timber, lumber, barks, charcoal, etc. 600
  - b Ornamental woods. 601
  - c Dye woods and barks. 602
  - d Gums and resins. 603
- 4 Olano, Casto, Manila, Province of Manila.—Section of Pterocarpus santalinus L. 601
- 5 Provincial Board, Province of Samar.
  - a Cane. 601
  - b Balao. 603
- 6 Jesus, Francisco de, Province of Pampanga.—Camanchile bark. 602
- 7 Provincial Board, Province of Masbate.—White pitch. 603
- 8 Cortina, Mariano de la, Bawang, Province of Batangas.—Abilo resin. 603
- 9 Orduña, Eduardo, Province of Batangas.—Resins and gums, macabuhay. 603
- 10 Labhart & Co., Province of Manila.—Mastic. 603
- 11 Provincial Board, Province of Tayabas.—White pitch. 603
- 12 Provincial Board, Province of Iloilo.—Seeds. 605

### Pomology.

- 13 General Inspection of Woods & Forests.—Fruits. 611
- 14 Provincial Board, Province of Manila.—Cocoa nuts. 611

### Agricultural Products.

- 15 Cirer, Manuel, Province of Tarlac.—Rice. 620
- 16 Arque, Benito, Province of Carite.—Rice. 620
- 17 Salvia, Fulgencio, Province of Camarines, S.—Rice. 620
- 18 Santos, Apolinaria, Province of Bulacan.—Rice. 620
- 19 Rico, José, Province of Na Ecyá.—Rice. 620
- 20 Otero, Manuel G., Province of Nva, Exija.—Rice. 620
- 21 Rodriguez, Ambrosio, Sariaya, Province of Tayabas.—Wheat. 620
- 22 Liñan, Diego, Province of Tarlac.
  - a Rice. 620
  - b Mongos. 622

- 23 Naves, Andres, Province of Bulacan.
  - a Anajao. 620
  - b Angolong hilive, tapican, etc. 622
- 24 Provincial Board, Province of Antigue.
  - a Rice. 620
  - b Cocoa and coffee. 623
- 25 Provincial Board, Province of Samar.
  - a Rice. 620
  - b Seeds. 624
- 26 Provincial Board, Province of Batangas.
  - a Maize and rice. 620
  - b Arbutra root. 623
  - c Cocoa and coffee. 623
- 27 Provincial Board, Province of Benguet.
  - a Rice. 620
  - b Beans. 621
  - c Coffee. 623
  - d Seeds. 624
- 28 Lorenzo, Catalino, Province of Pampanga.—Arrowroot. 622
- 29 Provincial Board, Province of Samar.—Casalote, tabiguig, arbutra root, etc. 622
- 30 Valmaceda, Esteban, Province of Bataan.—Gogo. 622
- 31 Provincial Board, Province of Bulacan.—Matang-ulang and arbutra root. 622
- 32 Adriano, Lucia A., Province of Mindoro.—Yuro. 622
- 33 Provincial Board, Province of Masbate.—Gogo. 622
- 34 Reyes, Andres, Province of Samar.
  - a Sarsaparilla root. 622
  - b Laurel. 623
- 35 Provincial Board, Province of Mindanao.
  - a Gogo. 622
  - b Cocoa and coffee. 623
- 36 Orduña, Eduardo, Province of Batangas.
  - a Campuput root. 622
  - b Tuba and millet seed. 624
- 37 Rodo, Luciano P. de, Province of Cavite.—Coffee. 623
- 38 Provincial Board, Province of Maiba.—Cinnamon, pepper, etc. 623
- 39 Lopez, Felix, Province of Cavite.—Coffee. 623
- 40 Temprado, Ramon F., Province of Camarines Sur.—Coffee. 623
- 41 Gallardo, Francisco, Province of Bohol.—Coffee. 623
- 42 Sanz, Victor, San José, Province of Lepanto.—Coffee. 623
- 43 Spanish Nation, Province of Manila.—Leaf and manufactured tobacco, cigars, and cigarettes. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

Agricultural, Animal, and Vegetable Products.

- 44 Ruiz, Juan, Province of Laguna.—Coffee. 623
- 45 Velarde, Angel, Province of Cavite.—Cocoa and coffee. 623
- 46 Teodoro, Saturnino, Province of Tarlac.—Cocoa. 623
- 47 Mendoza, Gregorio, Province of Tarlac.—Coffee. 623
- 48 Alcántara, Dámasco, Sariaya, Province of Batangas.—Cocoa. 623
- 49 Hernandez, Telesoro, San José, Province of Batangas.—Coffee. 623
- 50 Catigbac, Norberto, Province of Batangas.—Coffee. 623
- 51 Ron, A., & Son, Province of Cebu.—Coffee. 623
- 52 Nieves, Agapito, Province of Albay.—Cocoa and coffee. 623
- 53 Saucian, Cirilo, Guinobatan, Province of Albay.—Cocoa and coffee. 623
- 54 Economical Society, Province of Benguet.—Tea leaves. 623
- 55 Nieves, Agapito, Province of Masbate.—Tea leaves. 623
- 56 Provincial Board, Province of Camarines Sur.  
a Coffee. 623  
b Lumbang seed. 624
- 57 Peñalosa, Andrés, Province of Batangas.  
a Cocoa. 623  
b Lumbang seed. 624
- 58 Prieto, Federico, Province of Albay.  
a Coffee. 623  
b Pili seed. 624
- 59 Rodriguez, Lucia, Province of Pampanga.—Seeds. 624
- 60 Provincial Board, Ilocos Sur.—Seeds. 625
- 61 Mamanal, Luisa, Province of Tarlac.—Indigo seed. 624
- 62 Dairit, Florentino, Province of Pampanga.—Lumbang seed, sesame seed. 624
- 63 Leonarde, Quinton, Province of Laguna.—Lumbang seed. 624
- 64 Baneg, Jo, Province of Bulacan.—Lumbang seed. 624
- 65 Provincial Board, Province of Pampanga.—Pili seed. 624
- 66 Peñaloso, Andres, S. Pablo, Province of Batangas.—Lumbang seed. 624
- 67 Guzman, Miguel de, Province of Bataan.—Canary seed. 624
- 68 Mora, José, Province of Mindoro.—Castor beans. 624
- 69 Liñan, Diego, Province of Tarlac.—Beneseed. 634
- 71 Argoncillo, Ramon, Province of Batangas.—Coffee. 624
- 72 Jesus, Francisco de, Province of Pampanga.—Indigo seed. 624

Land Animals.

- 73 Inspection-General of Woods & Forests.—Zoological specimens. 630

Water Animals, Fish Culture, and Apparatus.

- 74 Provincial Board, Province of Manila.—Tortoise and other shells. 645
- 75 Provincial Board, Province of Bohol.—Mother-of-pearl shells. 645
- 76 Macatangay, Jorge, Province of Batangas.—Fishing nets. 647
- 77 Garun, Nicolás, Province of Manila.—Fishing nets. 647
- 78 Garcia, Nicolás, Province of Manila.—Model of fishing net. 647

Animal and Vegetable Products.

- 79 Pagdangco, Gavino, Gumaca, Province of Tayabas.—Sponges. 650
- 80 Provincial Board, Province of Bohol.—Flying-fox skins. 652
- 81 Provincial Board, Province of Laguna.  
a Buffalo horns. 652  
b Coconut oil. 662
- 82 Provincial Board, Province of Manila.  
a Varnished cowhides, cut hides, deer skins, shark skin, etc. 652  
b Birds' nests and feathers. 652  
c Pickled fish. 656
- 83 Osmeña, Rita, & Co., Province of Cebu.  
a Buffalo horns and sigay. 652  
b Perfume pastilles. 655  
c Sugar. 659  
d Cocoa pil. 662
- 84 Provincial Board, Province of Lepanto.—Honey. 654
- 85 Provincial Board, Province of Calamianes.—Virgin wax. 654
- 86 Estrada, Saturnino, Gumaca, Province of Tayabas.—Virgin wax. 654
- 87 Inspection-General of Woods & Forests.  
a Wax and honey. 654  
b Tapioca, sago, arrowroot, and other flours. 657
- 88 Casas, Calixta, Province of Cebu.—Perfume pastilles. 655
- 89 Garcia, Regino, Province of Manila, Cavite, Bulacan, Laguna, and Isla Negros.—Hulled rice. 657
- 90 Posar, José, Province of Mindoro.—Hulled rice. 657
- 91 Pasig, Agustin, Province of Mindoro.—Hulled rice. 657
- 92 Provincial Board, Province of Cavite.—Hulled rice. 657
- 93 Albir, Benito, Province of Cavite.—Hulled rice. 657
- 94 Ocampo, Benigno de, Province of Pampanga.—Arrowroot flour. 657
- 95 Provincial Board, Ilocos Sur.—Arrowroot flour. 657
- 96 Rodriguez, Lucia, Province of Pampanga.—Arrowroot flour. 657
- 97 Bravo, Antonio, Province of Batangas.—Sugar. 659
- 98 Guisones, Joaquin, Province of Batangas.—Sugar. 659
- 99 Argoncillo, Ramon, Province of Batangas.—Sugar. 659

## Animal and Vegetable Products, Textile Substances.

- 100 Rico, José, Province of Nueva Erija.—Sugar. 659
- 101 Macan, Luis, Calumpit, Province of Bulacan.—Sugar. 659
- 102 Aragon, Inocencia, Malate, Province of Manila.—Fruit syrups. 659
- 103 García, P., Province of Manila.—Fruit syrups. 659
- 104 Provincial Board, Tananan, Province of Leyte.—Sugar. 659
- 105 Gonzalez, Victorina, Province of Antique.—Sugar. 659
- 106 Lirer, Manuel, Province of Tarlac.—Sugar. 659
- 107 Lifan, Diego, Province of Tarlac.—Sugar. 659
- 108 Puig, José, Province of Pampanga.—Sugar. 659
- 109 Ocampo, Manuel de, Province of Pampanga.—Sugar. 659
- 110 Puig, Andrés, Province of Pampanga.—Sugar. 659
- 111 Miranda, Bernardo V. de, San Fernando, Province of Pampanga.—Sugar. 659
- 112 Lorenzo, Catalino, Province of Pampanga.—Sugar. 659
- 113 Sasatin, Leoncia, Province of Pampanga.—Sugar. 659
- 114 Buison, Julian, Province of Pampanga.—Sugar. 659
- 115 Jesus, Laureano, Province of Pampanga.—Sugar. 659
- 116 Enison, Catalino, Province of Pampanga.—Sugar. 659
- 117 Ocampo, Benigno de, Province of Pampanga.—Sugar. 659
- 118 Leon & Santos, José, Province of Pampanga.—Sugar. 659
- 119 Puig, Andrés, Province of Pampanga.—Sugar. 659
- 120 Gil, Rafael, Province of Pampanga.—Sugar. 659
- 121 Tison, José, Province of Pampanga.—Sugar. 659
- 122 Ker, Benito, Province of Pampanga.—Sugar. 659
- 123 Rosa & Son, Province of Cebu.—Sugar. 659
- 124 Onchica, Andrés, Province of Laguna.—Sugar. 659
- 125 Provincial Board, Province of Antique.—Sugar. 659
- 126 Provincial Board, Province of Mindanao.—Sugar. 659
- 127 Jesus, Francisco de, Province of Pampanga. 659  
 a Sugar. 660  
 b Alcohol. 660
- 128 Rodriguez, Lucia, Province of Pampanga. 659  
 a Sugar. 662  
 b Sesame and lumbang oils. 662
- 129 Leon, Celestino de, Province of Pampanga. 659  
 a Sugar. 662  
 b Benesced oil. 662
- 130 Inchausti & Co., Province of Manila.—Alcohol. 660
- 131 Reyes, Vicente, Province of Laguna.—Cocoa wine. 660
- 132 Besa Santos, Mateo, Province of Manila.—Palo-maria oil. 662
- 133 Provincial Board, Province of Samar.—Cocoanut oil. 662
- 134 Maringan, Jocinto, Province of Batangas.—Benesced oil. 662
- 135 Provincial Board, Province of Ilocos Sur.—Palo-maria and other vegetable oils. 662
- 136 Provincial Board, Province of Visayas.—Tagulana oil. 662
- 137 Besa Santos, Mateo, Province of Bulacan.—Palo-maria oil. 662
- 138 Naves, Andrés, Province of Bulacan.—Cocoanut oil. 662
- 139 Banes, Jo, Province of Bulacan.—Lumbang oil. 662
- 140 Provincial Board, Province of Camarines N.—Balao oil. 662
- 141 Dairit, Florentino, Province of Pampanga.—Lumbang oil. 662
- 142 Tribula, Eleuterio, Province of Pampanga.—Lumbang oil. 662
- 143 Maceda, Leon, Province of Laguna. Cocoanut oil. 662
- 144 Provincial Board, Province of Pampanga.—Benesced oil. 662
- 145 Orduña, Eduardo, Province of Batangas.—Lausina oil. 662
- 146 Inspection-General of Woods & Forests.—Vegetable oils. 662
- 147 Provincial Board, Province of Batangas.—Tuba and cocoanut oil. 662
- 148 Zugadi, Nicolás, Provinces of Bulacan, Ilocos Sur, Leite, Batangas, and Camarines N.—Vegetable oils. 662
- 149 Provincial Board, Province of Bulacan.—Lumbang and benesced oil. 662

## Textile Substances of Vegetable or Animal Origin.

- 150 Macatangay, Agaton, Province of Batangas.—Cotton. 665
- 151 Reyes, Juana, Province of Batangas.—Cotton. 665
- 152 Dimayuga, Procesa, Province of Batangas.—Cotton. 665
- 153 Reyes, Juan, Province of Bohol.—Raw cotton. 665
- 154 Roa, A., & Son, Province of Cebu.—Cotton. 665
- 155 Beluyos, Damian, Province of Batangas.—Cotton. 665
- 156 Provincial Commission, Province of Benguet.—Cotton. 665
- 157 Orduña, Eduardo, Province of Batangas. 665  
 a Cotton. 666  
 b Textile vegetable substances. 666
- 158 Provincial Board, Province of Batangas. 665  
 a Coyote cotton. 665  
 b Textile vegetable substances. 666
- 159 Provincial Board, Province of Mindanao. 665  
 a Cotton. 666  
 b Balibago cords. 666
- 160 Gomez, Enrique, Province of Abra.—Textile substances. 666

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-24.

Textile Substances, Machines, Implements.

- 161 Provincial Board, Province of Camarines Sur.—Abacá fibres. 666
- 162 Bravo, Antonio, Guagua, Province of Pampanga.—Balibago barks. 666
- 163 Provincial Board, Province of Samar.—Bonote. 666
- 164 Cortina, Mariano de la, Province of Batangas.—Maguey plant. 666
- 165 Provincial Board, Province of Manila.—Balibago fibres. 666
- 166 Argoncillo, Eustaquio, Lopez, Province of Tayabas.—Abacá fibres. 666
- 167 Figueroa, Andrés, Province of Albay.—Abacá fibres. 666
- 168 Rodriguez, José, Vigan, Province of Ilocos Sur.—Maguey. 666
- 169 Muñoz & Bros., Province of Albay.—Abacá and cabo-negro. 666
- 170 Provincial Board, Province of Camarines N.—Balibago fibres and abacá. 666
- 171 Gallegos, Tomás, Province of Albay.—Abacá lupiz. 666
- 172 Medina, Ildefonso, Province of Mindoro.—Abacá. 666
- 173 García, Cirilo, Guinobatan, Province of Albay.—Abacá. 666
- 174 Provincial Board, Burasun, Province of Leite.—Cabo-negro and Nabó. 669
- 175 Parochial Curate, Province of Pangasinan.—Textile substances. 666
- 176 Banson, Nicasio, Province of Bataan.—Textile vegetable fibres and samples of work. 666
- 177 Banson, Arcadio, Province of Bataan.—Dantin cord. 666
- 178 Provincial Board, Province of Pangasinan.—Textile vegetable fibres and samples of work. 666
- 179 Mangataren, Parson of, Pangasinan.—Alinoá bark and ropes. 666
- 180 Provincial Board, Province of Bohol.—Malacapas. 666
- 181 Jesus, Francisco de, Province of Pampanga.—Cord of thistle fibres. 666
- 182 Provincial Board, Province of Pampanga.—Textile vegetable fibres. 666
- 183 Vera, Rosa de, Province of Albay.—Nito. 666
- 184 Provincial Board, Province of Antique.—Textile vegetable substances. 666
- 185 Llamas, Gabriel, Province of Manila.—Dugtung-ajas bindweed. 666
- 186 Provincial Board, Province of Albay.—Bark and abacá fibres. 666
- 187 Provincial Board, Province of Laguna.—Abacá. 666
- 188 Reyes, Andrés, Province of Samar.—Abacá. 666
- 189 Juan, Fernando, Tanauan, Province of Leite.—Abacá layajon. 666
- 190 Peñafior, Ines, Province of Cavite.—Abacá. 666
- 191 Nieva, Calixto M., Province of Mindoro.—Abacá. 666
- 192 Perfecto, Teodora, Province of Camarines Sur.—Abacá. 666
- 193 Gallegos, Tomás, Province of Batangas.—Abacá lupiz. 666
- 194 Perez, Agustín, Province of Albay.—Abacá fibres. 666
- 195 Rivera, Gregorio, Orion, Province of Bataan.—Balibago fibres. 666
- 196 Reyes, Juana, Lemery, Province of Batangas.—Prepared abacá. 666
- 197 San Isidro, Parson of, Province of Pangasinan.—Cabulagna roots, and oplit bark. 666
- 198 Esteves, Félipe, Province of Albay.—Nito and piña. 666
- 199 Adriatano, Luciano M., Province of Mindoro.—Cabo negro. 666
- 200 Zugadi, Nicolas, Province of Bulacan.—Nito. 666
- 201 Provincial Board, Province of Bohol.—Textile vegetable fibres, etc. 666
- 202 Buison, Julian, Province of Pampanga.—Bark of the buri palm tree. 666
- 203 Peele, Hubbell, & Co., Santa Mesa, Province of Manila.—Abacá rigging. 666
- 204 Villamarzo, Tiburcio, Province of Tayabas.—Cabo-negro cables, nabo and pasao fibres. 666
- 205 Rivera, L. de, Province of Bataan.—Bark of the malacacas tree. 666
- 206 Panda, Corporation of, Province of Antique.—Pineapple leaf fibres. 666

Machines, Implements, and Processes of Manufacture.

- 207 Provincial Board, Province of Bulacan.—Plows. 670
- 208 García, Nicolas, Province of Manila.—Model of a sugar cane mill. 673

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## ANNEXES AND SPECIAL EXHIBITS IN THE DEPARTMENT OF AGRICULTURE.

### No. 69. CANADIAN LOG HOUSE.

Size, 40 feet by 64.

CANADIAN COMMISSION.

Is one story high, constructed of logs, and located close by the British Government Buildings. Its materials and contents constitute an exhibit of Canadian arboriculture and forest products.

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| <p>1 Quebec Advisory Board, Quebec.<br/> <i>a</i> White pine logs.<br/> <i>b</i> Sugar maple.<br/> <i>c</i> Ash birch.<br/> <i>d</i> Chestnut elm.<br/> <i>e</i> Hemlock butternut.<br/> <i>f</i> Yellow pine, red cherry.<br/> <i>g</i> Spruce cedar.<br/> <i>h</i> Black walnut.<br/> <i>i</i> Poplar oak.<br/> <i>j</i> Pear wood.</p> <p>2 Quereus &amp; Genana, Victoria, B. C.—Oak.</p> <p>3 Canadian Commission, Victoria, B. C.—Arbutus.</p> <p>4 George, D. F., Fredericton, N. B.—Clapboards.</p> <p>5 Moody &amp; Nelson, Victoria.<br/> <i>a</i> Native woods, etc.<br/> <i>b</i> Shingles.</p> <p>6 Layard, W. P., Victoria.—Oak flooring, etc.</p> <p>7 Dawson, W. G., Victoria.—Axe-handles.</p> <p>8 Layard, W. P., Victoria, B. C.—Pine.</p> <p>9 Cusack, H. P., Newberry.—Flour barrel hoops.</p> <p>10 Richardson, Peter, Chatham.—Hoops.</p> <p>11 Lactinbros, Wm., Quebec.—Yellow pine planks.</p> | <p>12 Rochester, I., Ottawa.—Yellow pine, etc.</p> <p>13 Head, James S., Ottawa.—Pine shingles.</p> <p>14 Perley &amp; Patton, Ottawa.—Yellow pine laths.</p> <p>15 Silliman, James R., Toronto.—Pine lumber, etc.</p> <p>16 Oliver, John, Toronto.—Chestnut, ash, oak, etc.</p> <p>17 Colwell, H., &amp; Son, Ontario.—Ash.</p> <p>18 Young, Levi, Quebec.—Board lumber.</p> <p>19 Bronsons &amp; Weston, Ontario.—White pine.</p> <p>20 Lachlaw, W., Bros., Arnprior.—Pine.</p> <p>21 Canadian Commission, Victoria, B. C.<br/> <i>a</i> Daglos pine.<br/> <i>b</i> Dogwood.</p> <p>22 Newell, George, Ottawa.—Ash columns.</p> <p>23 New Brunswick Advisory Board.<br/> <i>a</i> Woods, etc.<br/> <i>b</i> Maple logs.<br/> <i>c</i> Ash logs.<br/> <i>d</i> Birch logs.<br/> <i>e</i> Squared birch.</p> <p>24 Canadian Commission, Victoria, B. C.—Mouldings.</p> <p>25 Hayward &amp; Jenkinson, Victoria, B. C.—Mouldings, etc.</p> |
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### No. 144. CUBAN ACCLIMATION GARDEN.

EMILE LACHAUME, Proprietor.

Contains a variety of tropical plants, etc. Situated south of Horticultural Hall.

## No. 165. WAGON BUILDING.

Size, 144 feet by 196 feet.

Constructed of wood, one story high, situated north-east of Agricultural Hall, consists of three lines of sheds. Is used to display wagons, trucks, etc.

## Arboriculture, Machines, Engineering, Administration, Vehicles.

## Arboriculture and Forest Products.

- 1 Reppard, R. B., Savannah, Ga.—Yellow pine timber. 601

## Machines, Implements, and Processes of Manufacture.

- 2 Decrow, A. W., Bangor, Maine.—Scavenger. 674  
3 Lynch, Peter, Mt. Holly, N. J.—Hog scalders. 674

## Agricultural Engineering and Administration.

- 4 Wenkenbach, W., & Sons, Philadelphia, Pa.—Beer wagon. 682  
5 Keiser, Joseph, New York, N. Y.—Beer wagon. 682  
6 Sebastian, Jacob, New York, N. Y.—Wagon and truck. 682  
7 Crater, Charles H., North Kingsville, O.—Vehicle coupling. 682  
8 Lehigh Car Manufacturing Co., Stemton, Pa.—Platform, spring wagon, truck wagon. 682  
9 Studebaker Bros. Manufacturing Co., South Bend, Ind.—Farm, lumber, and express wagons. 682  
10 Cortland Wagon Manufacturing Co., Cortland, N. Y.—Platform spring business wagon. 682  
11 Jarboe, John W., New York, N. Y.—Paper model of wagon body. 682  
12 Adgate, J. J., New York, N. Y.—Self-unloading wagon. 682  
13 Carré, W. W., New Orleans, La.—Lumber wagon. 682  
14 Ressler, H. & G., Philadelphia, Pa.—Carts and wagons. 682  
15 Server & Brenz, Philadelphia, Pa.—Wagons. 682  
16 Mills & Combs, Wilmington, Del.—Wagon. 682  
17 Rech, Jacob, Philadelphia, Pa.—Milk wagon. 682  
18 Becker, Jacob, jr., Seymour, Ind.—Farmers' wagon. 682  
19 Beggs, John, & Sons, Philadelphia, Pa.—Truck and wagon. 682  
20 Lengert, George, & Son, Philadelphia, Pa.—Express wagons. 682  
21 Winchester & Partridge Manufacturing Co., Whitewater, Wis.—Wagons. 682  
22 Knickerbocker Ice Co., Philadelphia, Pa.—Ice wagon, and set of wheels. 682  
23 Wright Spring Co., Denmark, Iowa.—Wagon springs. 682  
24 Heytler, Frank, Burlington, Iowa.—Wagon. 682  
25 Wilson, Childs, & Co., Philadelphia, Pa.—Wagons and carts. 682  
26 Kramer, Jacob, New York, N. Y.—Dumping wagon. 682  
27 French & Co., Davenport, Ia.—Piano truck. 682  
28 Schauz, C., Philadelphia, Pa.—Business and express wagons. 682  
29 Funck & Hertsler, Burlington, Ia.—Farm wagon. 682  
30 Rauch, Charles, Cleveland, O.—Ice wagon. 682  
31 Harrison, Lauts Bros., & Co., South Bend, Ind.—Dump wagon. 682  
32 Austin, Tomlinson, & Webster Manufacturing Co., Jackson, Mich.—Lumber wagons. 682  
33 Fish Bros. & Co., Racine, Wis.—Farm and California rack bed wagons. 682  
34 Moline Wagon Co., Moline, Ill.—Farm and spring wagons. 682  
35 Schuttler, Peter, Chicago, Ill.—Spring farm and freight wagons. 682  
36 Kansas Manufacturing Co., Leavenworth, Kansas.—Farm wagons. 682  
37 Milburn Wagon Co., Toledo, O.—Spring farm and freight wagons, sleds. 682  
38 Stryker, Peter J., New Brunswick, N. J.—Self-loading excavator. 691

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## No. 166. POMOLOGICAL BUILDING.

Size, 182 feet by 192 feet.

Constructed of wood, one story high, situated east of Agricultural Hall. Is designed for the exhibit of fruits in season.

**No. 167. BREWERS' BUILDING.**

Architect, H. J. SCHWARZMANN.—Size, 272 feet by 96 feet.

Erected under the auspices of the United States Brewers' Association.

Constructed of wood in the style of Machinery Hall, and situated on Lansdowne drive, opposite the northeast corner of Agricultural Hall. It contains a model brewery, and exhibits the several processes of manufacturing malt liquors.

**Agricultural, Animal, and Vegetable Products.****Agricultural Products.**

- 1 White, John G., & Co., Philadelphia, Pa.—Barley and malt. 620
- 2 Schere, Solomon, Buffalo, N. Y.—Barley and malt. 620
- 3 Liebman's, S., Sons, Brooklyn, N. Y.—Malt. 620
- 4 Palin, Thomas, Brooklyn, N. Y.—Malt. 620
- 5 Pulling, A. C., New York, N. Y.—Malt. 620
- 6 Committee on Barley & Malt, New York, N. Y.—Barley and malt. 620
- 7 Perot's, Francis, Sons, Philadelphia, Pa.—Barley and malt. 620
- 8 Appleton, Wm., Albany, N. Y.—Malt. 620
- 9 Lill & Bullen, Chicago, Ill.—Malt. 620
- 10 Mueller, H., & Co., Cleveland, O.—Barley and malt. 620
- 11 McCredie, Thomas, Albany, N. Y.—Malt. 620
- 12 Pardee, Charles W., Oswego, N. Y.—Barley and malt. 620
- 13 Lynde, B. A., Buffalo, N. Y.—Malt. 620
- 14 Niagara Malt House, Buffalo, N. Y.—Malt. 620
- 15 Neidlinger, Schmidt, & Co., New York, N. Y.—Malt. 620
- 16 Poke, Charles, Chicago, Ill.—Malt. 620
- 17 Marsh, A. M., Buffalo, N. Y.—Malt. 620
- 18 Schmid, Bernheimer, & Co., Brooklyn, N. Y.—Malt. 620
- 19 White, Rufus P., New York, N. Y.—Malt and barley. 620
- 20 Akin, W. H., & Son, New York, N. Y.—Hops. 620
- 21 Weilbacher & Loewi, New York, N. Y.—Hops. 623
- 22 Franke, Louis, New York, N. Y.—Yeast. 620
- 23 Uhlman, Simon, New York, N. Y.—Hops. 623
- 24 Dole Bros., Boston, Mass.—Hops. 623
- 25 Schlesinger Bros., New York, N. Y.—Hops. 623
- 26 Tyler, George H., New York, N. Y.—Hops. 63
- 27 Scott, John R., & Co., New York, N. Y.—Hops. 63
- 28 Wheeler, Walter G. B., New York, N. Y.—Isinglass. 64
- 29 Howe & French, Boston, Mass.—Isinglass. 64
- 30 Chrisfield, Wm., & Son, New York, N. Y.—Isinglass. 64
- 31 Greenway, John, Syracuse, N. Y.—Ale and porter. 65
- 32 Hartung & Krantz, Honesdale, Pa.—Beer. 65
- 33 Meyerhofer, Carl, Poughkeepsie, N. Y.—Beer. 65
- 34 Miles, W. A., & Co., New York, N. Y.—Ale. 65

**Animal and Vegetable Products.**

- 35 Liebman, S., & Sons, Williamsburg, N. Y.—Beer. 65
- 36 Grecke, Philip, Philadelphia, Pa.—Ale, porter, and beer. 65
- 37 Hinckel, Frederick, Albany, N. Y.—Beer. 65
- 38 Yuengling & Sons, Pottsville, Pa.—Ale, porter, and beer. 65
- 39 Frauenheim & Vilsack, Pittsburg, Pa.—Beer. 65
- 40 Bergner & Engel, Philadelphia, Pa.—Beer. 65
- 41 Bolton, S., & Sons, Lansingburgh, N. Y.—Ale. 65
- 42 Evans, C. H., & Co., Hudson, N. Y.—Ale. 65
- 43 Gardner, John, & Co., Philadelphia, Pa.—Ale and porter. 65
- 44 Smith, Robert, Philadelphia, Pa.—Ale. 65
- 45 Clausen, H., & Son, New York, N. Y.—Ale and beer. 65
- 46 Walker, J., & Co., Cincinnati, O.—Ale and porter. 65
- 47 Baltz, J. & P., Philadelphia, Pa.—Beer. 65
- 48 Blatz, Valentine, Milwaukee, Wis.—Beer. 65
- 49 Reuter & Alley, Boston, Mass.—Beer. 65



Animal and Vegetable Products, Machines, Implements.

- 50 Walker, J., & Co., Cincinnati, O.—Ale. 660
  - 51 Clausen, H., & Co., New York, N. Y.—Beer. 660
  - 52 Anheuser, E., & Co.'s Brewing Association, St. Louis, Mo.—Malt liquor. 660
  - 53 Pfannenstiel, C., Philadelphia, Pa.—Beer. 660
  - 54 Ruppert, Jacob, New York, N. Y.—Beer. 660
  - 55 Gukes, C., Philadelphia, Pa.—Ale. 660
  - 56 Philip Best Brewing Co., Milwaukee, Wis.—Malt liquor. 660
  - 57 Jones, David, New York, N. Y.—Malt. 660
  - 58 Barbey, Peter, Reading, Pa.—Beer. 660
  - 59 Feigh, Adrian, New York, N. Y.—Beer. 660
  - 60 Kane, E., & Co., Brooklyn, N. Y.—Beer. 660
  - 61 Rulsann & Horrman, Stapleton, N. Y.—Beer. 660
  - 62 Hupfel's, A., Sons, New York, N. Y.—Beer. 660
  - 63 Ziegele, Albert, Buffalo, N. Y.—Beer. 660
  - 64 Schmitz & Kohne, New York, N. Y.—Beer. 660
  - 65 Jos. Schlitz Brewing Co., Milwaukee, Wis.—Beer. 660
  - 66 Mayer & Bachman, Staten Island, N. Y.—Beer. 660
  - 67 Bechtel, George, Staten Island, N. Y.—Beer. 660
  - 68 Grasser & Brand, Toledo, O.—Beer. 660
  - 69 Ferris, H., & Son, New York, N. Y.—Ale. 660
  - 70 Ehrel, George, New York, N. Y.—Beer. 660
  - 71 Ebling, Philip & William, Morrisania, N. Y.—Beer. 660
  - 72 Hoffman & Merkel, New York, N. Y.—Beer. 660
  - 73 Loewer, Valentine, New York, N. Y.—Beer. 660
  - 74 Urig, Joseph, St. Louis, Mo.—Beer. 660
  - 75 Lamp, Wm. I., St. Louis, Mo.—Beer. 660
  - 76 Elias & Betz, New York, N. Y.—Beer. 660
  - 77 Mark, J. & F., Brooklyn, N. Y.—Beer. 660
  - 78 Finck, A., & Son, New York, N. Y.—Beer. 660
  - 79 Voigt, E. W., Detroit, Mich.—Beer. 660
  - 80 Kuechle, Joseph, St. Josephs, Mo.—Beer. 660
  - 81 Rose, Miss Sophie, Baltimore, Md.—Beer. 660
  - 82 Beuilein, C., Bro., & Co., Bennett's Station, Pa.—Beer. 660
  - 83 Seiger, I., Baltimore, Md.—Beer. 660
  - 84 Schlotterer, S., Philadelphia, Pa.—Beer. 660
  - 85 Howard & Fuller, Brooklyn, N. Y.—Ale. 660
  - 86 Schwane & Amend, New York, N. Y.—Beer. 660
  - 87 McKechnie, J. & A., Canandaigua, N. Y.—Ale and beer. 660
  - 88 Philip Best Brewing Co., Milwaukee, Wis.—Beer. 660
  - 89 Miles, Wm. A., & Co., New York, N. Y.—Ale. 660
  - 90 Hughes, H. R. & M., Pittston, Pa.—Ale. 660
  - 91 Liebmans, S., Sons, Brooklyn, N. Y.—Beer. 660
  - 92 Hollender & Co., New York, N. Y.—Beer. 660
  - 93 Lyman, T. C., & Co., New York, N. Y.—Ale. 660
  - 94 Hawkins, Chas. P., New York, N. Y.—Ale. 660
  - 95 Anheuser, E., Co.'s Brewing Association, St. Louis, Mo.—Beer. 660
  - 96 Flanagan & Wallace, New York, N. Y.—Ale. 660
  - 97 Besley's Waukegan Brewing Co., Chicago, Ill.—Ale. 660
  - 98 Von der Horst, J. H., Baltimore, Md.—Beer. 660
  - 99 Beadleston, Price, & Woers, New York, N. Y.—Ale. 660
  - 100 Stein, Conrad, New York, N. Y.—Beer. 660
- Machines, Implements, and Processes of Manufacture.**
- 101 Kampf, Stephen, Albany, N. Y.—Malt-shovels. 670
  - 102 Lynde, B. A., Buffalo, N. Y.—Malt-shovels. 670
  - 103 Knapp, S. P., New York, N. Y.—Malt shovels. 670
  - 104 Beardsley, B. A., Waterville, N. Y.—Hop press. 673
  - 105 Ingraham & Beard, Chicago, Ill.—Grain separator and grader. 673
  - 106 Keastner, Chas., & Co., Chicago, Ill.—Feed-mills. 674
  - 107 Haberman, S., New York, N. Y.—Beer-swimmer. 674
  - 108 White's N. Y. Malt House, New York, N. Y.  
a Plows, shovels, etc. 670  
b Elevator buckets, etc. 674
  - 109 White, John G., & Co., Philadelphia, Pa.—Malt-mill. 674
  - 110 Roos, Aug., New York, N. Y.—Beer-cooler. 674
  - 111 Zoller, A., Hoboken, N. J.—Barrel-washer, valves, and faucets. 674
  - 112 Steubing, Henry, New York, N. Y.—Ice-swimmer. 674
  - 113 Decker, John, & Son, Philadelphia, Pa.—Ice-swimmers, watering-can, funnels, and yeast-sieve. 674
  - 114 Iron C'd Can Co., New York, N. Y.—Apparatus for preserving ales, beer, etc. 674

## Machinery, Implements, Engineering, Administration.

- 115 Trotteman & Ott, Philadelphia, Pa.—Cooler. 674
- 116 Spiess, Fr., New York, N. Y.—Malt-mill. 674
- 117 Schalk, C. W., Reading, Pa.—Malt-mill. 674
- 118 Hupfel, Adolf G., New York, N. Y.—Barrel-rolling machine. 674
- 119 Bergner, Theodore, Philadelphia, Pa.—Cork-driver, valves. 674
- 120 Otto, John M., Brooklyn, N. Y.—Beer-cooler, ice-swimmer, baskets. 674
- 121 Union Hardware Co., New York, N. Y.—Beer-coolers. 674
- 122 Kirby Bung Manufacturing Co., Cincinnati, O.—Bung machine and saw. 674
- 123 Cornell, G. B., Chicago, Ill.—Bung-bushes. 675
- 124 Union Machine Works, New York, N. Y.—Malt-mill. 674
- 125 Haas, Edward, Philadelphia, Pa.—Malt-mill, scourer, and cleaner. 674
- 126 Stoll, Chas., Brooklyn, N. Y.—Scales, malt-mill. 674
- 127 Bremer, J. L., Bro., & Co., New York, N. Y.—Grain-bags. 674
- 128 Littlejohn, L., New York, N. Y.—Bung-bushes and tools. 674
- 129 Spiess, Fr., New York, N. Y.—Pumps, belt-stretcher, shaving-machine. 674
- 130 Storms, James, Buffalo, N. Y.—Elevator buckets. 674
- 131 Gendar, W. F. & T. V., New York, N. Y.—Brewers' instruments. 674
- 132 Schmah, Martin, New York, N. Y.—Copper-washing apparatus. 674
- 133 Woerle, W., Milwaukee, Wis.—Ice-swimmer. 674
- 134 Murphy, C. J., New York, N. Y.—Testing-sull. 674
- 135 Hupfel, J. C. G., New York, N. Y.—Barrel-rinsing machine. 674
- 136 Woerle, Chas., New York, N. Y.—Elevator buckets. 675
- 137 Burkhardt, G. F., & Co., Philadelphia, Pa.—Steep-tub. 675
- 138 Morrison, J., Portsmouth, N. H.—Hogshead. 675
- 139 Burkhardt, G. J., & Co., Philadelphia, Pa.—Vats and tanks. 675
- 140 Link, John, Cincinnati, O.—Barrels and kegs. 675
- 141 Fisher & Hall, Philadelphia, Pa.—Cedar tubs. 675
- 142 Smith, John M., & Son, Philadelphia, Pa.—Steep-tub. 675
- 143 Dieringer, C., Cincinnati, O.—Coopers' work. 675
- 144 Lutz, R. F., Wabash, Ind.—Kegs and staves. 675
- 145 Schwarzwaldler & Son, New York, N. Y.—Kegs, barrels, and hogsheads. 675
- 146 Luckhaupt Bros., Columbus, O.—Kegs. 675
- 147 Wandelt, Samuel, Brooklyn, N. Y.—Tubs. 675

- 148 Seligsberg, Arnold, New York, N. Y.—Tubs, vats, malt-holders, and chests. 675

## Agricultural Engineering and Administration.

- 149 White's N. Y. Malt House, New York, N. Y.—Carts. 682
- 150 Saal & Schlitch, Philadelphia, Pa.—Beer wagon and machinery. 682
- 151 Wenkenbach, W. L., Philadelphia, Pa.—Beer-wagon. 682
- 152 Klesler, Joseph, New York, N. Y.—Beer-wagon. 682
- 153 Brunner, August F., New York, N. Y.—Plan of ice-house. 683
- 154 Wisker, Aug., Boston, Mass.—Model of brewery. 683
- 155 Weillbacher, P., New York, N. Y.—Hop-kiln. 683
- 156 Stoll, Charles, Brooklyn, N. Y.—Model of brewery. 683
- 157 Holden, D. L., Philadelphia, Pa.—Drawings of ice and refrigerating machines. 683
- 158 Seligsberg, A., New York, N. Y.—Grain-box. 683
- 159 White's N. Y. Malt House, New York, N. Y.—Kiln flooring and furnace. 683
- 160 Bergner, Theodore, Philadelphia, Pa.—Malt turner and kiln. 683
- 161 Spangenburg, Schroeder, & Co., Milwaukee, Wis.—Wire kiln surface. 683
- 162 Hughes, W. W., & Son., Philadelphia, Pa.—Malt-kiln, etc. 683
- 163 Hampel, Otto, New York, N. Y.—Model malt-kiln. 683
- 164 Lieber, Robert, Boston, Mass.—Model of brewery. 683
- 165 Korn, George W., Philadelphia, Pa.—Refrigerator. Brewers' store. 683
- 166 Shada, O. S., Philadelphia, Pa.—Block of coal. 683
- 167 German Rock Asphalt Co., New York, N. Y.—Cement flooring. 683
- 168 White's New York Malt House, New York, N. Y.—Cement flooring. 683
- 169 Mock, Isidor, Brooklyn, N. Y.—Cement floors. 683
- 170 Meyers, A. G., New York, N. Y.—Compound for lining barrels. 683
- 171 Wehn, G. H., Philadelphia, Pa.—Artificial stone. 683
- 172 Doerchuck, Gustav, Brooklyn, N. Y.—Varnish. 683
- 173 Hatter, Carl, New York, N. Y.—Bottle-stoppers. 683
- 174 Brown & Jones, Waterville, N. Y.—Stove to dry hops. 683
- 175 Asten, William B., & Co., New York, N. Y.—Malt-bags. 683
- 176 Bremer, J. L., Bro. & Co., Philadelphia, Pa.—Seamless bags. 683
- 177 Tuchfarber, F., & Co., Cincinnati, O.—Show-cards. 683
- 178 Simon, A., New York, N. Y.—Weather-vanes. 683

Agricultural Engineering and Administration.

179 Wells, Hope, & Co., Philadelphia, Pa.—Metallic signs. 283	193 Otis Bros., New York, N. Y.—Elevator. 563
180 Trageser, John, New York, N. Y.—Copper work. 284	194 Bawer, E., Brooklyn, New York.—Racking-off hose. 564
181 Toope, Charles, New York, N. Y.—Grate-bars. 513	195 Maegerlein, Chas., Chicago, Ill.—Hose. 564
182 Brown, A. & F., New York, N. Y.—Horizontal engine, shafting, pulleys, etc. 552	196 Fairbanks & Ewing, Philadelphia, Pa.—Scales. 571
183 Vogt, Henry, & Bro., Brooklyn, N. Y.—Tubular boiler. 552	197 Haas, Edward, Philadelphia, Pa.—Scales and hopper, etc. 571
184 Brown, A. & F., New York, N. Y.—Shafting, pulleys, and hangers. 553	198 Buffalo Scale Co., Buffalo, N. Y.—Scales. 571
185 Albany Lubricating Compound & Cup Co., New York, N. Y.—Oil cups. 555	199 Willing & Co., New York, N. Y.—Racking-cock. 587
186 Niagara Steam Pump Works, Brooklyn, N. Y.—Pumps. 560	200 Schmitz, Theodors, New York, N. Y.—Britannia measures. 587
187 Schutte & Goehring, Philadelphia, Pa.—Pumps. 560	201 Guth, H., New York, N. Y.—Brewers' instruments. 587
188 George F. Blake Manufacturing Co., New York, N. Y.—Steam pumps. 560	202 Tagliabue, Charles J., New York, N. Y.—Brewers' instruments. 587
189 Zinsser, Wm., & Co., New York, N. Y.—Pumps. 560	203 Travis, M. W., New York, N. Y.—Weighing and measuring implements. 587
190 Knowles Steam Pump Works, New York, N. Y.—Pumps. 560	204 Fiedlerlin, F., New York, N. Y.—Mashing-machine. 587
191 Cope & Maxwell Manufacturing Co., Cincinnati, O.—Air pumps. 561	205 Schafhaus, John, New York, N. Y.—Mashing-machine. 587
192 Krakovicz, F. O., Walkertown, Ind.—Ventilator. 562	206 Schimper & Immen, Newark N. J.—Mashing-machine. 587
	207 Spittler & Lang, New York, N. Y.—Mashing and shaving machine. 587

GREAT BRITAIN.

Animal and Vegetable Products, Engineering, Administration.

Animal and Vegetable Products.

1 Pickering, Jonathan, Stockton-on-Tees, England.—Must. 661
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Agricultural Engineering and Administration.

2 Lawrence & Co., London, England.—Refrigerators. 68
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CANADA.

Animal and Vegetable Products.

Animal and Vegetable Products.

1 Davis, T., & Bro., Toronto, Canada.—Porter and ale. 661	
2 Keith & Son, Halifax, N. S.—Ale. 461	

GERMANY.

(West of Nave, Columns 1 to 4.)

Agricultural Products.

Agricultural Products.

1 Schlemmer, August von, Hochheim, Germany.—Malt. 623
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

**No. 168. THE HOUSE APIARY.**

Size, 10 feet by 16 feet.

J. S. COX, Montclair, N. J.

Exhibits thirty-two colonies of Italian, Corinthian, and Cyprian bees at work making honey. Situated east of the Pomological Building,

**No. 169. GUANO BUILDING.**

Situated east of the Women's Pavilion, and north of Fountain Avenue. Is used for the exhibition of fertilizers.

**No. 171. WINDMILLS.**

1 Eclipse Windmill Co., Beloit, Wis.  
—Three windmills for pumping water,  
grinding, etc.

2 U. S. Wind Engine & Pump Co.,  
Batavia, Ill.—Two windmills.

3 Stover Wind Engine Co., Greencastle, Pa.—One windmill.

4 Hartford Pump Co., Hartford, Conn.  
—One windmill for raising water by compressed air.

**No. 172. HEADQUARTERS OF THE "PRACTICAL FARMER."**

(Newspaper.)

Size, 10 feet by 16 feet.

J. R. GARRETSON, Proprietor, Rochester, N. Y.

Situated east of the Pomological Building. Office of the paper.

**No. 173. HAY PRESS.**

Architect, W. P. ROCKAFELLOW, Albany, N. Y.—Size, 48 feet front; wings, 12 by 20 and 12 by 24.

P. K. DEDRICK & Co., Albany, N. Y.

Exhibits the perpetual baling press.

**No. 176. BOILER HOUSE.**

Size, 40 feet by 100 feet.

Situated directly east of Agricultural Hall, contains two Mast sectional boilers, manufactured at Springfield, Ohio, 100 horse-power each, which furnish steam to the machines in Agricultural Hall.

# STATED DISPLAYS.

The Stated Displays in the Agricultural Department of the International Exhibition are as follows:

## AGRICULTURAL PRODUCTS.

Pomological Products and Vegetables . . . . .	May 16th to 24th.
Strawberries . . . . .	June 7th to 15th.
Early Grass Butter and Cheese . . . . .	June 26th to July 6th
Early Summer Vegetables . . . . .	June 20th to 24th.
Honey . . . . .	June 20th to 24th.
Raspberries and Blackberries . . . . .	July 3d to 8th.
Southern Pomological Products . . . . .	July 18th to 22d.
Melons . . . . .	August 22d to 26th.
Peaches . . . . .	September 4th to 9th.
Northern Pomological Products . . . . .	September 11th to 16th.
Autumn Vegetables . . . . .	September 19th to 23d.
Cereals . . . . .	September 25th to 30th.
Potatoes and Feeding Roots . . . . .	October 2d to 7th.
Grapes . . . . .	October 10th to 14th.
Autumn Butter and Cheese . . . . .	October 17th to 21st.
Fats . . . . .	October 23d to November 1st.
Autumn Honey and Wax . . . . .	October 23d to November 1st.

## FIELD EXHIBITIONS.

Mowing Machines, Tedders, and Hay Rakes . . . . .	June 26th to 30th.
Reaping Machines . . . . .	July 5th to 10th
Wool-Casting Tournament . . . . .	August 15th.

## LIVE STOCK.

Horses . . . . .	September 1st to 14th.
Dogs . . . . .	September 1st to 8th.
Feat Cattle . . . . .	September 21st to October 4th.
Sheep . . . . .	October 10th to 18th.
Pigs . . . . .	October 10th to 18th.
Poultry . . . . .	October 27th to November 6th

# EXHIBITIONS OF LIVE STOCK.

1. The live stock display at the International Exhibition will be held within the months of September, October, and November, 1876; the periods devoted to each family being as follows: Horses, mules, and asses, from September 1st to 14th. Dogs from September 1st to 14th. Horned cattle, from September 21st to October 4th. Sheep, swine, and goats, from October 10th to 18th. Poultry will be exhibited from October 27th to November 6th.

2. Animals to be eligible for admission to the International Exhibition must be, with the exception of trotting stock, walking horses, matched teams, fat and draught cattle, of such pedigree that the exhibitor can furnish satisfactory evidence to the Chief of Bureau, that as applied to thorough-bred horses, as far back as the fifth generation of ancestors on both sides, they are of pure blood and of the same identical breed. As to short-horned cattle, they are registered in either Allen's, Alexander's, or the English herd-books. As to Holsteins, Herefords, Ayrshires, Devons, Guernseys, Britanys, Kerrys, and other pure breeds, they are either imported or descended from imported animals on both sides. As to Jerseys, they are entered in the Herd Register of the American Jersey Cattle Club, or in that of the Royal Agricultural Society of Jersey. As to sheep or swine they are imported or descended from imported animals, and that the home-bred shall be of pure blood as far back as the fifth generation.

3. The term breed, as used, is intended to comprehend all family divisions, where the distinction in form and character dates back through years of separation; for instance, it is held that the progeny of a pure-blood Jersey and a pure-blood Guernsey is not a thorough-bred but a cross-bred animal, and, as such, is necessarily excluded.

4. In awarding prizes to animals of pure blood, the judges will take into consideration chiefly the relative merits as to the power of the transmission of their valuable qualities; a cardinal object of the Exhibition being to promote improvement in breeding stock.

5. In case of doubt relative to the age of an animal, satisfactory proof must be furnished or the animal will be subject to examination by a veterinary surgeon; and should the state of dentition indicate that the age has not been correctly stated, the person so entering as an exhibitor will be prohibited from exhibiting in any class.

6. The forms of classification for awards, as given under each head, are intended (except in the case of trotting stock, walking horses, matched teams, fat and draught cattle) to apply to the animals of any pure breed that are entered for competition.

7. The Exhibition being open to the world, it is of the first importance that the best of their kind only be brought forward, as the character of the stock will be judged by the general average of those exhibited.

8. Exhibitors will be expected to furnish their own attendants, on whom all responsibility of the care of feeding, watering, and cleaning the animals, and also of cleaning the stalls, will rest.

9. Forage and grain will be furnished at low prices, at depots conveniently located near the grounds. Water can be had at all times, ample facilities being provided for its conveyance and distribution throughout the show yards.

10. Exhibitors must supply all harness, saddlery, vehicles, and other appointments, and all such must be kept in their appointed places.

11. The Commission will erect ample accommodation for the exhibition and protection of live stock, yet contributors who may desire to make special arrangements for the display of their stock, will be afforded facilities at their own cost. Fractious animals, whether mares, mares with foals, or bulls, will be provided with stalls of suitable character.

12. All stalls will be regularly and distinctly numbered; corresponding numbers on blood uniform character will be given to each exhibitor, and no animal will be allowed to pass from its stall without its proper number attached.

13. Numbers alone will distinguish and mark the show yards, preceding the award prizes.

14. The judges of live stock will make examination of all animals on the opening day of each serial show, and will for that day have exclusive entrance to the show yard.

15. No premium will be awarded an animal, though there be no competitor.

16. All animals will be under the supervision of a veterinary surgeon, who will examine them before admission, to guard against infection, and who will also make a daily inspection and report. In case of sickness the animal will be removed to a suitable inclosure specially prepared for its comfort and medical treatment.

17. When animals are taken sick, the exhibitors may either direct the treatment of the animal, or allow the veterinary surgeon appointed by the Commission to treat the animal. In this latter event the exhibitor will be charged for all expenses incurred. As ample care will be taken of animals exhibited, the Commission cannot be held responsible for any injury or accident.

18. A ring will be provided for the display and exercise of horses and cattle.

19. On the last day of each serial show, a public auction may be held of such animals as the exhibitors may desire to sell. Animals may be sold at private sale at any time during their exhibition. During the period of a serial show, no animal, even in the event of being sold, will be allowed to be definitely removed from the grounds.

20. An official catalogue of the animals exhibited will be published.

21. Exhibitors of thoroughbred animals must, at the time of making their entries, file with the Chief of the Bureau a statement as to their pedigree, affirmed or sworn to before an officer authorized to take affidavits, and the papers so filed shall be furnished to the Jury of Experts.

22. The ages of live stock must be calculated up to the opening day of the exhibition of the class to which they belong.

23. Sheep breeders, desiring to exhibit wool, the produce of the flocks, will display not less than five fleeces.

24. All animals must be entered according to the prescribed rules as given in forms of entry, which forms will be furnished on application to the Chief of the Bureau of Agriculture.

### BREEDING HORSES.

Mares entered as breeding animals must have had foals within one year of the show, or if in foal, certificates must be furnished to that effect.

All foals exhibited must be the offspring of the mare with which they are at foot.

Awards will be made to respective breeds for pure bred turf stallions, six years and over; pure bred turf stallions, over four years and under six years; pure bred turf stallions, over two years and under four years; pure bred turf mares, six years and over; pure bred turf mares, over two and under six years.

Awards will be made for trotting stallions, six years and over; trotting stallions, over four years and under six; trotting stallions, over two years and under four; pure bred draught stallions, six years and over; pure bred draught stallions, over four years and under six years; pure bred draught stallions, over two years and under four years; pure bred draught mares, six years and over; pure bred draught mares, over two and under six years; trotting brood mares, six years and over; trotting fillies, over four years and under six; trotting fillies, over two years and under four.

### RUNNING AND TROTTING HORSES

Shall be judged according to their record up to August 15th, 1876, due regard being had to present condition.

Awards will be made for running horses having made fastest record; trotting stallions having trotted a mile within two-thirty; mares and geldings having trotted a mile within twenty-five.

### WALKING HORSES.

Fast-walking horses, whether bred for agricultural purposes or the saddle, will compete in the ring for awards.

### MATCHED TEAMS.

Awards will be made for matched teams having trotted a mile in two-thirty-five; matched stallions for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each; matched geldings for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each; matched mares for heavy draught, over fifteen hands high, and over fourteen hundred pounds weight each; matched mules for heavy draught, over fifteen and a half hands high, and over thirteen hundred pounds weight each.

### BREEDING ASSES.

Awards will be made to respective breeds of pure bred jacks over six years; pure bred jacks over three years and under six; pure bred she-asses over six years; pure bred she-asses over three years and under six.

### NEAT CATTLE.

No cow will be eligible for entry unless accompanied with a certificate that, within fifteen months preceding the show, she had a living calf, or that the calf, if born dead, was born at its proper time. No heifer entered as in calf will be eligible for a prize unless accompanied with a certificate that she had been bullied before the first of April, or presents unmistakable proof of the fact to the judges. No bull above one year old can be entered unless he have a ring in nose, and the attendant be provided with a leading stick, which must be used whenever the animal is taken out of stall.

Awards will be made for the best herd of each respective breed, consisting as follows: one bull, four cows, none under fifteen months.

Neat cattle, of each respective breed, will compete individually for awards: bulls, three years and over; bulls over two years and under three years; bulls over one year and under two years; cows four years and over; cows over three and under four years; cows or heifers in calf, over two years and under three years; yearling heifers. A sweepstake award will be made for the best bull of any breed. A sweepstake award will be made for the best cow of any breed.

### FAT AND DRAUGHT CATTLE.

Animals entered as fat and draught cattle need not be of pure blood, but will compete on individual merits. Fat cattle must be weighed, and in general those will be judged best which have the greatest weight with the least surface and offal.

Awards will be made for best fatted steer of any age and breed; best fatted cow of any age or breed; most powerful yoke of oxen; most rapidly walking yoke of oxen; most thoroughly trained yoke of oxen; most thoroughly trained team of three or more yokes of oxen.

### BREEDING SHEEP.

All sheep offered for exhibition must be accompanied with certificate to the effect that they have been shorn since the first of April, and the date given. If not fairly shorn, or if clipped so as to conceal defects, or with a view to improve the form or appearance, they will be excluded from competition.

Awards will be made to respective breeds for the best pen of five animals of same flock and including one ram, the ewes all having had living lambs the past spring.

Awards will be made to respective breeds for rams two years and over; shearing rams.

A sweepstake award will be made for the best ram, respectively of long, middle, and fine woolled breeds.

Awards will be made to respective breeds for ewes in pens of three, all having had living lambs; shearlings in pens of three.

A sweepstake award will be made for the best pen of three breeding ewes, respectively of long, middle, and fine woolled breeds.

### FAT SHEEP.

Fat sheep entered for competition must be weighed, and in general those will be judged best which have the greatest weight, with the least surface and offal.

Awards will be made for pen of three best fatted sheep of each breed; pen of three best fatted sheep of any breed.

### BREEDING SWINE.

Every competing sow above one year old must have had a litter, or be in pig, and the owner must bring proof of these facts if required. If a litter of pigs be sent with a sow, the young pigs must be sucklings, the offspring of the sow, and must not exceed the age of three months.

Awards will be made to respective breeds for the best pen of one boar and two breeding sows; for pen of sow and litter.

Awards will be made to respective breeds for boars two years old and over; boars one year old and under two years; boars between nine months and one year; breeding sows two years old and over; breeding sows one year old and under two years; pen of three sow pigs between nine months and one year.

A sweepstake award will be made for the best boar of any breed. A sweepstake award will be made for the best sow of any breed.

#### FAT SWINE.

Fat swine entered for competition must be weighed, and, in general, those will be judged best which have the greatest weight, with the least surface and offal.

Awards will be made for pairs of best fattened hogs of each breed; pairs of best fattened hogs of any breed.

#### DOGS.

Benches will be furnished free of charge. Exhibitors may themselves assume the cost of attendance upon their animals, but to provide for them who cannot conveniently attend the Exhibition, the Commission will assume the expenses of feeding and daily care, upon the payment of an attendance charge of three dollars upon each animal.

Awards will be made to respective breeds for dogs of two years and over; dogs of one year and under two; pups.

A sweepstake award will be made for the best foreign-bred dog of any breed. A sweepstake award will be made for the best home-bred dog of any breed.

Awards will be made to respective breeds for bitches of two years and over; bitches of one year and under two; bitch pups.

A sweepstake award will be made for the best foreign-bred bitch of any breed. A sweepstake award will be made for the best home-bred bitch of any breed.

#### POULTRY.

Poultry can only be exhibited in coops made after specifications furnished by the Bureau of Agriculture. The Commission will furnish coops and attendance upon payment of one dollar on each bird of the gallinaceous division, and two dollars on each pair of the aquatic division.

Awards will be made to respective breeds for pairs of one year and over, of chickens, turkeys, ducks, geese, swans, pigeons, guineas, and ornamental birds; for pairs under one year.

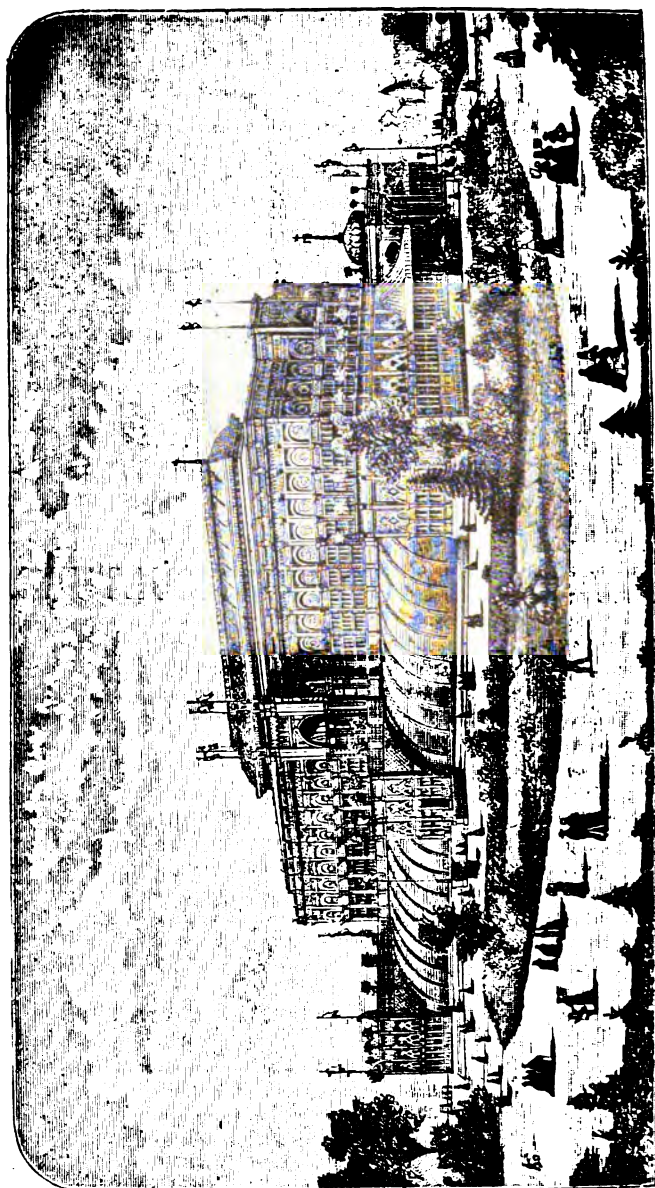
#### FISH.

Living fishes will be displayed in both fresh and salt water aquaria.

Awards will be made for largest display of fish of each species; largest display of fish of all species.



# DEPARTMENT OF HORTICULTURE.



HORTICULTURAL HALL

# No. 151. HORTICULTURAL HALL.

Size 383 by 193 feet.

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*Architect*, H. J. SCHWARZMAN.

*Contractor*, JOHN RICE, Philadelphia.

*Wrought iron furnished by* KEYSTONE BRIDGE COMPANY, Pittsburgh, Pa.

*Cast iron furnished by* SAMUEL J. CRESSWELL, Philadelphia.

*Painting by* JOSEPH CHAPMAN, Philadelphia.

*Masonry by* MOORE & SCATTERGOOD, Philadelphia.

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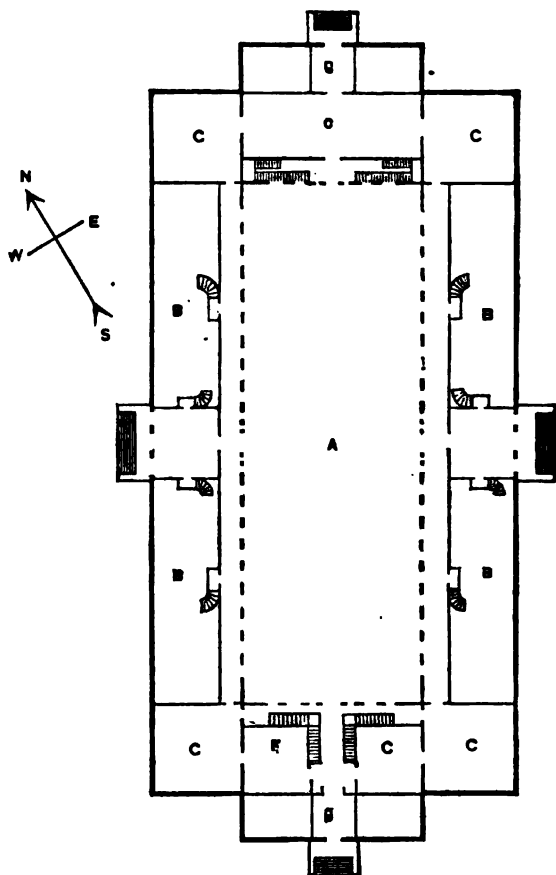
APPROPRIATIONS of the City of Philadelphia have provided the Horticultural Building, which is to remain in permanence as an ornament of Fairmount Park. It is on the Lansdowne Terrace, a short distance north of the Main Building and Art Gallery, and has a commanding view of the Schuylkill river and the northwestern portion of the city. The design is in the Moorish style of architecture of the twelfth century, the principal materials externally being iron and glass. The main floor is occupied by the central conservatory, 230 by 80 feet, and 55 feet high, surmounted by a lantern 170 feet long, 20 feet wide, and 14 feet high. Running entirely around this conservatory, at a height of 20 feet from the floor, is a gallery 5 feet wide. On the north and south sides of this principal room are four forcing houses for the propagation of young plants, each of them 100 by 30 feet, covered with curved roofs of iron and glass. Dividing the two forcing houses in each of these sides is a vestibule 30 feet square. At the centre of the east and west ends are similar vestibules, on either side of which are the restaurants, reception room, offices, etc. From the vestibules ornamental stairways lead to the internal galleries of the conservatory, as well as to the four external galleries, each 100 feet long and 10 feet wide, which surmount the roofs of the forcing houses. These external galleries are connected with a grand promenade, formed by the roofs of the rooms on the ground floor, which has a superficial area of 1800 square yards.

The east and west entrances are approached by flights of blue marble steps from terraces 80 by 20 feet, in the centre of each of which stands an open kiosque 20 feet in diameter. The angles of the main conservatory are adorned with eight ornamental fountains. In the basement, which is of fireproof construction, are the kitchen, storerooms, coal-houses, ash-pits, heating arrangements, etc.

The ground was graded and the foundations of Horticultural Hall laid on May 1st, 1875. The building was finished April 1st, 1876. It covers an area for exhibition purposes of 122,500 square feet, and cost about \$300,000. This building will be permanent.

# HORTICULTURAL HALL.

*Scale, 80 ft. to 1 in.*



**A Floral Hall.**

**B Greenhouse.**

**C Exhibits.**

**F Offices.**

**G Porch.**

**Total Length, 350 ft.**

**Width, 100 ft.**

**Height, 65 ft.**

# CLASSIFICATION.

## DEPARTMENT VII.—HORTICULTURE.

### ORNAMENTAL TREES, SHRUBS, AND FLOWERS.

- CLASS 700.—Ornamental trees and shrubs, evergreens.  
CLASS 701.—Herbaceous perennial plants.  
CLASS 702.—Bulbous and tuberous rooted plants.  
CLASS 703.—Decorative and ornamental foliage plants.  
CLASS 704.—Annuals and other soft-wooded plants, to be exhibited in successive periods during the season.  
CLASS 705.—Roses.  
CLASS 706.—Cactacea.  
CLASS 707.—Ferns, their management in the open air and in ferneries, wardian cases, etc.  
CLASS 708.—New plants, with statement of their origin.  
CLASS 709.—Floral designs, etc.—Cut flowers, bouquets, preserved flowers, leaves, seaweeds. Illustrations of plants and flowers.—Materials for floral designs. Bouquet materials, bouquet holders, bouquet papers, models of fruits, vegetables, and flowers.

### HOATHOUSES, CONSERVATORIES, GRAPERIES, AND THEIR MANAGEMENT.

- CLASS 710.—Hothouse and conservatory plants.  
CLASS 711.—Fruit trees under glass.  
CLASS 712.—Orchids and parasitic plants.  
CLASS 713.—Forcing and propagation of plants.  
CLASS 714.—Aquatic plants under glass, or in aquaria, etc.  
CLASS 715.—Horticultural buildings, propagating houses, hotbeds, etc., and modes of heating them. Structures for propagating and forcing small fruits.  
CLASS 716.—Portable or movable orchard houses and graperies, without artificial heat. Frames, beds.

### GARDEN TOOLS, ACCESSORIES OF GARDENING.

- CLASS 720.—Tools and implements.—Machines for the transplanting of trees, shrubs, etc. Portable forcing pumps, for watering plants in greenhouses and methods of watering the garden and lawn.  
CLASS 721.—Receptacles for plants.—Flower pots, plant-boxes, tubs, fern cases, jardinieres, etc. Window gardening. Plant and flower stands, ornate designs in iron, wood, and wire.  
CLASS 722.—Ornamental wirework, viz.: fences, gates, trellis bordering of flower beds, porches. Park seats, chairs, garden statuary, vases, fountains, etc. Designations, labels, numbers.

### GARDEN DESIGNING, CONSTRUCTION, AND MANAGEMENT.

- CLASS 730.—Laying out gardens.—Designs for the laying out of gardens, and the improvement of private residences. Designs for commercial gardens, nurseries, graperies. Designs for the parterre. Books on gardening.  
CLASS 731.—Treatment of water for ornamental purposes, cascades, fountains, reservoirs, lakes.  
CLASS 732.—Formation and after-treatment of lawns.  
CLASS 733.—Garden construction, buildings, etc.—Rockwork, grottoes. Rustic constructions and adornments for private gardens and public grounds.  
CLASS 734.—Planting, fertilizing, and cultivating.



## UNITED STATES.

## Trees, Shrubs, Flowers, Hot-House Plants.

Ornamental Trees, Shrubs, Flowers,  
and Floral Designs.

- 1 Wharton, Joseph, Philadelphia, Pa.  
—Eucalyptus globulus. 700
- 1a Bingham, Rodolphus, Camden, N. J.—Nelumbium luteum; sarracenia purpurea, drosera. 700
- 1b Bliss, G. K., & Sons, New York, N. Y.—Gladiolus, branchleyeas. 702
- 2 Lovering, Joseph S., Philadelphia, Pa.—Decorative foliage, plants, etc. 703
- 3 Graham, Hugh, Philadelphia, Pa.  
a Decorative and ornamental foliage plants, palms, etc. 703  
b Begonias, soft-wooded plants, etc. 704  
c Ferns, in collection. 707  
d Floral designs and cut flowers. 709
- 4 Pennock Brothers, Philadelphia, Pa.  
a Foliage plants. 703  
b Cut-flower designs. 709
- 4a Boyle, W. F., Philadelphia, Pa.—Decorative and ornamental foliage plants. 703
- 4b Compton, Louis F., New Brighton, N. Y.—Variety of colons. 703
- 4c Eagle, Louis J., Philadelphia, Pa.—Decorative and ornamental foliage plants. 703
- 4d Robertson, Thomas, Philadelphia, Pa.—Decorative and ornamental foliage plants. 703
- 5 The Misses Richardson, Philadelphia, Pa.—Cactus. 706
- 6 Fitzgerald, K., Philadelphia, Pa.—Cactus. 706
- 7 Miller & Sievers, San Francisco, Cal.  
a Collection of Pacific coast cactus. 706  
b Collection of ferns. 707
- 8 Such, George, South Amboy, N. J.  
a Decorative and ornamental foliage plants. 703  
b Cactus, in collection. 706  
c New plants. 708
- 9 Moon, Mahlon, & Son, Morrisville, Pa.—Collection of ferns. 707
- 10 Dick, John, Philadelphia, Pa.  
a Cactus. 706  
b Ferns. 707
- 11 Miller & Hayes, Philadelphia, Pa.—Tree ferns from Australia. 707
- 12 Parsons, S. B., & Sons, Flushing, N. Y.  
a Varieties of ferns. 707  
b Skeleton plants. 709
- 13 Sturtevant, Edmund D., Bordentown, N. J.—Ferns. 707
- 14 Saunders, William, Washington, D. C.—New and rare plants. 708
- 14a Roehrs, I., New York, N. Y.—Begonia troeblic; entirely new begonia. 708
- 15 Freeman, J. R., Georgetown, D. C.—Seedling begonia (large leaved species). 708
- 16 Dreer, Henry A., Philadelphia, Pa.  
a Ferns in ferneries and in wardian cases. 707  
b Floral designs. 709
- 17 Henderson, Peter, New York, N. Y.—Wire designs for cut flowers, bouquet papers, and materials. 709
- 18 Marot, Charles H., Philadelphia, Pa.—“The Gardener’s Monthly.” 709
- 19 Parisian Flower Co., New York, N. Y.—Artificial tropical leaf-plants and bouquets. 709
- 20 Kresken, H. Acosta, Cincinnati, Ohio.—Preserved flowers, leaves, grasses, bouquets, baskets, crowns, etc. 709
- 20a Rice, D., & Co., Philadelphia, Pa.—Michaux and Nuttall’s North American Sylva. 709
- 20b Huss, J. & Francois, Flushing, N. Y.—Japanese and American skeleton ferns. 709
- 20c Bayeradorfer, M. M., & Co., Philadelphia, Pa.—Bouquet fixtures formed in shape of a tree. 709
- 20d Kift, Joseph, & Son, Philadelphia, Pa.—Floral designs, cut flowers, bouquets, etc. 709
- 20e Peple, A., Brooklyn, N. Y.—Fancy grasses, baskets, etc. 709
- 20f Ringwalt, G. P. B., Philadelphia, Pa.—Autumnal leaves. 709
- 20g Smith, Stephen W., Philadelphia, Pa.—Preserved natural flowers. 709
- 20h Iles, F., Philadelphia, Pa.—Wire floral designs. 709
- 21 Cook, Mrs. O. A., San Francisco, Cal.—Preserved natural flowers. 709
- 22 Rolker, August, & Sons, New York, N. Y.—Preserved flowers and grasses, bouquet papers, tin foil, wire, frames, etc. 709
- 23 Leopold, Emil L., New York, N. Y.—Fancy flower baskets, in straw, different shapes and styles. 709
- 24 Le Mout, Adolphe, New York, N. Y.—Preserved flowers, representation of a lake with natural water lilies. 709
- 25 Jansen, Edward, 104 West 18th street, New York, N. Y.—Fancy flower baskets, imitation coral, white gift, straw, brown willow, and fancy wire. 709  
Fine novelties will be out for the coming fall season. Sample cards and price lists sent on application.
- 26 Rue, Miss Lizzie, Philadelphia, Pa.—Models of fruits and flowers. 709
- 27 Williamson, A. & H. A., 438 N. 8th St., Philadelphia, Pa.—Wax models of fruits, vegetables, flowers, ferns, autumn and foliage leaves. 709  
Instructions given and orders executed. 32 premiums awarded.
- 28 Moffatt, Isaac, Philadelphia, Pa.—Models of named American fruits, facsimile of choice specimens. 79

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

## Hot-House Plants and Appliances, Gardening Implements.

- 29 Brossé, Madame S. C., San Francisco, Cal.—Collection of California sea mosses. 709
- 30 Long Brothers, Buffalo, N. Y.—Floral designs, comprising monograms, initials, etc. 709
- 31 Klag, Philip, New York, N. Y.—Preserved natural flowers. 709
- 31<sup>a</sup> Hazlehurst & Young, Philadelphia, Pa.—Cut flowers. (*Special concession to sell in the Exhibition grounds.*) 709

## Hot-Houses, Conservatories, Graperies, and their Management.

- 32 Saunders, William, Washington, D. C.—Collection of American economic plants. 710
- 33 Graham, Hugh, Philadelphia, Pa.—Hot-house and conservatory plants, crotons, etc. 710
- 34 Lovering, Joseph S., Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 35 Price, Stephen S., Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 36 Committee of the Congressional Library of the United States (Botanic Garden), Washington, D. C.—Official, medicinal, tropical, and semi-tropical plants. 710
- 37 United States Agricultural Department, Washington, D. C.—Official and medicinal plants, mahogany, cocoa, chocolate, guava, papaw, rose apple, etc. 710
- 38 Baldwin, Mrs. M. W., Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 39 Zoological Society, Philadelphia, Pa.—Australian tree fern. 710
- 40 Bines, Samuel M., Philadelphia, Pa.—India rubber tree. 710
- 41 Merryweather, Ann E., Camden, N. J.—Aloe. 710
- 42 Sellers, John, jr., Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 43 Cummings, William, Philadelphia, Pa.—Orange tree, banana, ivy, and date palm. 710
- 44 Faust, William F., Philadelphia, Pa.—Philodendron pertusum and water lily. 710
- 45 Mackenzie, Thos. J., Philadelphia, Pa.—Hot-house and conservatory plants, plants of commerce. 710
- 46 Johnson, Joseph, Philadelphia, Pa.—Wax plant. 710
- 47 Cuthbert, Allen, Philadelphia, Pa.—Orange trees. 710
- 48 Carpenter, Mrs. George W., Philadelphia, Pa.—Collection of conservatory plants. 710
- 50 Abbott, Charles F., Philadelphia, Pa.—Century plants (green and striped), sage palm. 710
- 52 Agnew, Hannah A., Philadelphia, Pa.—Banana. 710
- 53 Morris, Galloway C., Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 54 Hoffner, Jacob, Cincinnati, Ohio.—Sage palm over 100 years old, belonged to Robert Morris in 1776. 710
- 55 Stokton, John A., Philadelphia, Pa.—Fig tree. 710
- 56 Weightman, William, Philadelphia, Pa.—Hot-house and conservatory plants. 710
- 57 Hance, A., & Sons, Red Bank, N. J.—Cycas revoluta. 710
- 58 Schaffer, William L., Philadelphia, Pa.—Sago palms. 710
- 59 Cope, Alfred, Philadelphia, Pa.—Century plants. 710
- 60 Such, George, South Amboy, N. J.—Ferns, hot-house, and conservatory plants. 710  
Orchids, etc. 712
- 61 Clark, E. W., Philadelphia, Pa.—Century plants. 710
- 63 Moon, Mahlon, & Son, Morrisville, Pa.—Variegated pineapple. 710
- 63<sup>a</sup> Sturtevant, Edmund D., Bordentown, N. J.—Orchids and parasitical plants. 712
- 64 Wilson, John G., New York, N. Y.—Portable green-house boiler, hot water pipe with vapor pan attached. 715
- 64<sup>a</sup> Myers, Thomas J., & Son, Philadelphia, Pa.—Green-house boiler for heating conservatories. 715
- 64<sup>b</sup> Dick, John, Philadelphia, Pa.—Boiler for heating green-houses, conservatories, etc. 715
- 64<sup>c</sup> Warner, James, Philadelphia, Pa.—Boiler for heating green-houses, etc. 715
- 65 Jordan Horticultural Co., St. Louis, Mo.—Heating apparatus for green-houses. 715
- 65<sup>a</sup> Hitchings & Co., New York, N. Y.—Corrugated fire-box, boilers, and base-burning water-heater for warming green-houses, conservatories, etc. 715
- 66 Smith & Lynch, Boston, Mass.—Portable boilers for heating green-houses. 715
- 67 Ellis, Charles R., New York, N. Y.—Base-burning boilers for heating green-houses, graperies, etc. 715

## Garden Tools, Accessories of Gardening.

- 68 Allen, R. H., & Co., New York, N. Y.—Comstock sower and attachments. 720
- 69 Jones, John M., Palmyra, N. Y.—Horticultural and floricultural implements of various styles and modifications. 1st. Revolving-staff implements for pruning, transplanting, weeding, and cultivating. 2d. Implements to be used with one hand, for weeding, transplanting, and cultivating, and in one of its forms is very convenient and attractive for ladies' use. 720
- 69<sup>a</sup> Bliss, B. K., & Sons, New York, N. Y.—Hand seed-sower, fertilizer drop-per. 720
- 69<sup>b</sup> Jenks, George E., Concord, N. H.—Portable sprinkler and fountain for irrigating and ornamenting lawns, etc. 720
- 69<sup>c</sup> Farra, L. D., Philadelphia, Pa.—Lawn sprinkler. 720
- 70 Wheeler, W. F., Boston, Mass.—Hose liquid distributor, watering pot, insect annihilator, for garden and field, liquid manure distributor. 720



## Garden Ornaments, Accessories, and Designs.

- 71** Moon, Mahlon, & Son, Morrisville, Pa.  
 a Wheel hoe. 720  
 b Vase. 721  
 c Lead label. 722
- 72** Dreer, Henry A., Philadelphia, Pa.  
 a Tools and implements. 720  
 b Receptacles for plants, fern cases, etc. 721
- 73** Bingham, O. A., Keene, N. H.—Revolving flower stand. 721
- 74** Hews, A. H., & Co., North Cambridge, Mass.—Flower pots, hanging pots, ferneries, garden vases, etc. 721
- 75** Pierce, Mrs. M. R., New York, N. Y.—Window attachments and other improved flower stands with water receptacle, sprinkling pan, and draining saucer. 721
- 76** Chase, James, Rochester, N. Y.—Combined aquarium, plant stand, bird cage, and fernery. 721
- 77** McClunie, Thomas, Hartford, Conn.—Drainer and evaporator with globe attachments for pots, vases and hanging baskets. 721
- 78** Rolker, August, & Sons, New York, N. Y.—Flower pots, boxes, fern cases, flower stands, etc. 721
- 79** Hills, George, Plainville, Conn.—Revolving flower stand with fountain attachment. For hydrants, self-sprinkling, surplus water caught by drip-pan. 721
- 80** Perine, M., & Sons, Baltimore, Md.—Flower pots, stone and fancy earthenware. 721
- 81** Pennock Brothers, Philadelphia, Pa.—Wardian cases, ferneries with shades 721
- 82** Hess, John M., & Sons, Philadelphia, Pa.—Chandelier designs with baskets, hanging baskets, hanging ferneries, vases, etc. 721
- 83** Freeman & Smith, Racine, Wis.  
 a Aquaria, ferneries, fountains, vases, etc. 721  
 b Plant stands, flower-pot brackets, window boxes and shelves, tree-tub castors, etc. 722  
 Illustrated catalogues free. Goods packed flat for shipment.
- 84** Racine Hardware Co., Racine, Wis.  
 a Plant and flower stands, ferneries, aquariums, etc. 721  
 b Fountains, vases, settees, etc. 722
- 85** Galloway & Graff, Philadelphia, Pa.  
 a Parlor vases, window boxes, pots, fern cases, baskets, etc. 721  
 b Terra-cotta statuary, vases, tazzas, pedestals. 722
- 86** Page, W. H., & Co., Greenville, Conn.  
 a Plant stands. 721  
 b Trellises. 722
- 87** Chase, Benj., jr., Derry, N. H.—Round-tapering flower stakes. 722
- 88** Balderston, George, Colora, Md.—Sectional vases. 722
- 89** Henderson, Peter, Jersey City, N. J.—Pot, plant, garden, and veranda trellises. 722
- 90** Harvey & Adamson, Philadelphia, Pa.—Oriental and Japanese garden vases, statuary, etc. 722
- 91** The Floral Works, 58 Cortlandt st., New York, N. Y., E. A. Reeves, Treasurer.—Crystal self-acting fountains, and self-acting fountain-attachments for aquaria and bird-cages, very simple and reasonable in price. 722
- 92** Mott, J. L., Iron Works, New York, N. Y.—Garden statuary, vases, etc. 722
- 93** Sanguinetti, Percy A., Philadelphia, Pa.—Glass-covered metallic labels, tree-protecting boxes. 722
- 94** Mayer, Charles, Baltimore, Md.—Self-acting water fountain. 722
- 95** Ebert, John, Philadelphia, Pa.—Parlor self-driving fountain. 722
- 95a** Iles, F., Philadelphia, Pa.—Wire baskets, flower stands, etc. 722
- 96** Mueller, Quackenbos & Co., Philadelphia, Pa.—Vases in artificial stone designs. 722
- 97** Brown, J. Morton, Philadelphia, Pa.—Grape-vine trellises. 722
- 98** Moorhead Clay Works, Philadelphia, Pa.—Terra-cotta vases. 722
- Garden Designing, Construction, and Management.**
- 99** Miller & Hayes, Philadelphia, Pa.—Designs for laying out gardens and improving country residences. 730
- 101** Weidenmann, Jacob, New York, N. Y.—Set of plans for beautifying and improving country homes; survey, drainage, planting, and general maps. 730
- 102** Heissinger, F. X., New York, N. Y.—Designs for landscape gardening. 730
- 103** McClunie, Thomas, Hartford, Ct.  
 a Designs for laying out gardens, and the improvement of public grounds. 730  
 b Essay on formation and after-treatment of lawns. 732  
 c Metallic lawn gutters, curb, and drain. 733
- 103a** Bliss, B. K., & Sons, New York, N. Y.—Globe sun-dial, adapted to any latitude. 320
- 103b** Shove, Geo. A., Dighton, Mass.—Designs for a sanatorium. 342
- 103c** Phoenix Stone Manufacturing Co., Philadelphia, Pa.—Artificial stone. 715
- 103d** Rion, James H., Winsboro', S. C.—Section of cork-oak raised from an acorn. 600

## OUT-DOOR EXHIBITS.

## Ornamental Trees, Shrubs, and Flowers.

- 1** Bingham, Rudolphus, Camden, N. J.—Water lilies. 702
- 1a** Saft, James, Philadelphia, Pa.—Fig tree. 700

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

- 1b** Bliss, B. K., & Sons, New York, N. Y.—*Gladiolus brenciliensis*. 702
- 2** Mackenzie, Thomas J., Philadelphia, Pa.—Decorative foliage plants. 703
- 2a** Wilson, Charles H., Lower Merion, Pa.—Collection of geraniums. 713

## Garden Ornaments, Designs, Tools, Ornamental Plants.

- 2<sup>b</sup> Gibson & Bennet, Woodbury, N. J.—Collection of verbenas. 703
- 2<sup>c</sup> Harris, Wm. K., Philadelphia, Pa.—Collection of geraniums. 703
- 3 Dreer, Henry A., Philadelphia, Pa.  
 a Bulbous and tuberous-rooted plants. 702  
 b Ornamental foliage plants. 703  
 c Annuals and soft-wooded plants. 704  
 d Ferns, in ferneries and warden cases. 707
- 3<sup>a</sup> Scott, Robert, Philadelphia, Pa.  
 a Collection of geraniums; Zonlaes geraniums. 703  
 b Collection of roses. 705
- 4 Maginly, Thomas J., Philadelphia, Pa.  
 a Annuals and other soft-wooded plants. 704  
 b Roses, in collection. 705
- 4<sup>a</sup> Marc, Gabriel, Woodside, N. Y.—Collection of roses. 705
- 5 Moon, Mahlon & Son, Morrisville, Pa.  
 a Ornamental trees, shrubs, etc. 700  
 b Herbaceous plants. 701  
 c Gladiolus, dahlias, etc. 702  
 d Flowering and ornamental plants, etc. 703  
 e Soft-wooded plants. 704  
 f Roses, in collection. 705  
 g New plants. 708
- 6 Allen's new American hybrid gladiolus, raised by C. L. Allen, Long Island, New York. 702
- 7 H. E. Hooker's new grape Brighton, very early, hardy, and excellent. 702
- 8 E. Y. Teas' new tri-colored cana, and new geraniums. 703
- 9 Wm. H. Moon's collection of new clematis. 703
- 6 Felton, A. L., Philadelphia, Pa.  
 a Herbaceous perennial plants. 701  
 b Bulbous and tuberous-rooted plants. 702  
 c Annuals and other soft-wooded plants. 704
- 7 Sturtevant, Edmund D., Borden-town, N. J.  
 a Herbaceous plants. 701  
 b Ferns. 707
- 8 Such, George, South Amboy, N. J.  
 a Ornamental trees, shrubs, etc. 700  
 b Herbaceous perennial plants. 701  
 c Bulbous and tuberous-rooted plants. 702
- 9 Dick, John, Philadelphia, Pa.  
 a Ornamental trees, shrubs, etc. 700  
 b Decorative and ornamental plants. 703  
 c Soft-wooded plants. 704  
 d Roses. 705  
 e New plants. 708
- 10 Wilson, William C., Astoria (L. I.), N. Y.—Plants for flower beds. 703
- 11 Henderson, Peter, 35 Courtlandt st., New York, N. Y.—250 varieties of new and rare geraniums, comprising double zonale, silver tri-color and golden tri-color sorts; also a circular bed of 500 plants, representing the "massing" or "ribbon" style of gardening by the use of different colored leaves. Located on and near Agricultural avenue. 704
- 12 Meehan, Thomas, Philadelphia, Pa.  
 a Hardy trees and shrubs. 700  
 b New plants. 708
- 13 Zeller, Charles, Flatbush, Long Island, N. Y.—Monthly carnations, tropical plants, lilliums, and cut-flowers a specialty. 701
- 14 Compondu, Louis F., New Brighton, N. Y.—Pansies. 708
- 15 Hance, A., & Son, Red Bank, N. J.—New hardy ornamental plants and trees. 706
- 16 Parsons, S. B., & Sons, Flushing, N. Y.  
 a Deciduous trees, evergreens, and shrubs. 700  
 b New plants from Japan. 708
- 17 Hoopes, Bro., & Thomas, West Chester, Pa.  
 a Conifers. 700  
 b Ivies. 703
- 18 Parsons, R. B., & Co., Flushing, N. Y.  
 a Evergreen trees and shrubs, conifers, rhododendrons, kalmias, etc., deciduous trees, magnolias, azaleas, etc. 700  
 b Roses, in collection. 705
- 19 Miller & Hayes, Philadelphia, Pa.  
 a Ornamental trees and shrubs. 700  
 b Decorative plants. 703  
 c Roses, in collection; Centennial geranium. 705
- 20 Buist, Robert, Philadelphia, Pa.  
 a Ornamental trees and shrubs, abies and retinospora, from Japan. 700  
 b Roses, in collection; Centennial geranium. 705  
 c New plants; clematis veronica from Japan. 708
- 21 Moore, Samuel H., junior, Philadelphia, Pa.—Fig tree. 700
- 22 Hexamer, F. M., New Castle, N. Y.—Begonia Froebeli, a new bedding plant, Mont Blanc, a new hybrid. 708

## Garden Tools, Accessories of Gardening.

- 23 Peck & Skilton, Westville, Conn.  
 a Rustic goods for house. 712  
 b Rustic goods for grounds. 722
- 24 Mott, J. L., Iron Works, New York, N. Y.—Fountains, vases, statuary, and settees. 722
- 25 Hanson, F. O., Philadelphia, Pa.—Galvanized railing, fences, gates, seats, vases, etc. 722
- 26 Gossin, F., Philadelphia, Pa.—Terra-cotta vases. 722
- 27 Mitchell, Wilson, Philadelphia, Pa.—Potsilica (artificial stone) fountain basins, vases, tiles, etc. 722
- 28 Walker, M., & Sons, Philadelphia, Pa.—Wrought-iron railing, ornamental gates, farm and hurdle fence, wirework 722
- 29 Brown, J. Morton, Philadelphia, Pa.—Grape-vine trellises. 722
- 30 O'Brien Bros., Yonkers, N. Y.  
 a Hanging baskets, etc. 721  
 b Rustic gates, settees, chairs, stands, vases, etc. 722
- 31 Moorhead Clay Works, Philadelphia, Pa.—Terra-cotta vases. 722
- 31<sup>a</sup> Elmore, Daniel, Trumansburg, N. Y.—Settees and chairs. 722  
 (In grounds of American Restaurant.)

## Garden Designing, Construction, and Management.

- 32 Sturtevant, Edmund D., Borden-town, N. J.—Rustic adornments. 733
- 33 O'Brien Bros., Yonkers, N. Y.—Rustic summer-houses, etc. 733

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-24.

THE

# PENNSYLVANIA RAILROAD

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### FAST MAIL ROUTE

OF THE UNITED STATES.

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**FRANK THOMSON,**  
*General Manager.*

**D. M. BOYD, Jr.,**  
*General Passenger Agent.*

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# THE SUN NEWSPAPER

Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 140,000; its weekly edition over 88,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of THE SUN printed every week during the year ending March 11, 1876.

WEEK ENDING	COPIES PRINTED.	WEEK ENDING	COPIES PRINTED.
March 20.....	849,382	September 18.....	860,358
27.....	845,802	25.....	858,778
April 3.....	867,956	October 2.....	868,935
10.....	863,556	9.....	870,820
17.....	855,076	16.....	878,082
24.....	858,270	23.....	874,625
May 1.....	869,542	30.....	876,160
8.....	867,550	November 6.....	908,580
15.....	877,450	13.....	852,372
22.....	874,946	20.....	847,815
29.....	866,276	27.....	836,248
June 5.....	873,782	December 4.....	845,878
12.....	869,769	11.....	1,042,716
19.....	880,348	18.....	956,294
26.....	888,846	25.....	933,864
July 3.....	898,862	January 1.....	933,987
10.....	867,574	8.....	952,201
17.....	877,400	15.....	953,019
24.....	876,282	22.....	969,910
31.....	874,216	29.....	967,850
August 7.....	865,558	February 5.....	993,080
14.....	875,982	12.....	1,024,647
21.....	880,488	19.....	1,027,209
28.....	870,502	26.....	1,014,766
September 4.....	872,211	March 4.....	1,014,993
11.....	860,755	11.....	1,028,951
TOTAL.....		46,799,769	

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

## ADVERTISING RATES.

DAILY AND SUNDAY, 40 cents a line, ordinary advertising; large type, 80 cents; and preferred positions, 50 cents to \$2.50, according to classification.

WEEKLY, 50 cents a line; no extra charge for large type. Preferred positions, from 75 cents to \$2.00.

## SUBSCRIPTION RATES.

DAILY (4 pages), by mail, 55c. a month, or \$6.50 a year, postpaid; with Sunday edition, \$7.70.

SUNDAY (8 pages), \$1.20 per year, postpaid.

WEEKLY (8 pages), \$1.20 per year, postpaid.

Address,

THE SUN,  
New York.

## Garden Designing, Construction, and Management.

- |   |   |
|---|---|
| <p><b>34</b> Peck &amp; Skilton, Westville, Ct.—<br/>Rustic buildings. 733</p> <p><b>35</b> Lebanon Building &amp; Paving Block<br/>Company, Lebanon, Pa.—Building blocks<br/>of annealed slag paving. 733</p> <p><b>35a</b> Seifbrecht, H. A., &amp; Co., New York,<br/>N. Y.—Rock-work. 733</p> <p><b>35b</b> Elmore, Daniel, Trumansburg, N.<br/>Y.—Summer-houses and pagodas. 733</p> | <p><b>36</b> Pacific Guano Co., Boston, Mass.<br/>a Machines, materials, staple products of<br/>the soil of the United States, specimen<br/>plants fertilized with guano. 734<br/>b Commercial fertilizers, phosphatic, calca-<br/>reous, etc. 681</p> <p><b>37</b> Boileau, A., New York, N. Y.—<br/>Trained fruit trees. 734</p> <p><b>38</b> Austin, R., Camden, N. J.—Cranberry<br/>vines. 734</p> <p><b>39</b> Miller &amp; Slevens, San Francisco,<br/>Cal.—Collection of cones of the Pacific<br/>coast, conifers. 603</p> |
|---|---|
- For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

# GREAT BRITAIN.

## Ornamental Trees, Shrubs, Tools, and Accessories of Gardening.

### Ornamental Trees and Shrubs.

- 1 Veitch, James, & Sons, Royal Exotic Nursery, London.
- a Collection of standard and dwarf rhododendrons, standard and dwarf hollies, standard Portugal laurels. 700
- b Collection of new Japanese conifers. 708
- 2 Waterer, Anthony, Knap Hill Nursery, Woking, Surrey.—Rhododendrons and azaleas (*in tent*). 700
- 3 Williams, B. S., Victoria & Paradise Nurseries, London.—Collection of new and rare plants, orchids, and ferns of recent introduction. 708

- 4 Bull, William, Chelsea, London.—Illustration of new and rare plants. 709

### Garden Tools, Accessories of Gardening.

- 5 Barnard, Bishop, & Barnard, Norfolk Iron Works, Norwich.
- a Lawn-mowers, garden-rollers, horse-reels, water-barrows, croquet-netting, espalier-trainers, etc. 720
- b Garden-chairs. 722
- 6 Doulton, H., & Co., Lambeth, London.—Terra-cotta work, statue of Diana (heroic size), Amazon vase, and sundry other vases. 726

# NEW ZEALAND.

## Ornamental Trees and Shrubs.

### Ornamental Trees and Shrubs.

- 1 New Zealand.—Esculent fern root. Will germinate if crushed and planted in rich soil and shady place; collection of ferns. 707

# JAMAICA.

## Hot-Houses, Conservatories, and their Management.

### Hot-Houses, Conservatories, and their Management.

- 1 Thompson, Robert, Jamaica.—Collection of economic plants. 728

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 23-24.

## CANADA.

## Gardening Appliances.

## Garden Tools, Accessories of Gardening.

- 1 Wells, William, Beamsville, Ont.—Flower-pots and saucers. 721
- 2 Ahern, J. H., Paris, Ont.—Flower-pots and saucers. 721
- 3 Pratt, Chorless, London, Ont.—Flower-pots and saucers. 722

- 4 Welding, E., Brantford, Ont.—Flower-pots and saucers. 721

- 5 Farrar, G. H. & L. E., St. John, Q.—Fancy flower-pots. 721

- 6 Hobson, Walter, Quebec, Q.—Flower-pots. 721

## FRANCE.

## Ornamental Plants, Hot-Houses, Ornaments, Designs.

## Ornamental Trees, Shrubs, and Flowers.

- 1 Roempler, L., Nancy.—Ornamental plants. 700
- 2 Leroy, Louis, Angers, Maine-and-Loire.—Ornamental plants and fruit trees. 700
- 3 Verdier, E., senior, Paris.—Gladiolus. 702
- 4 Verdier, Charles, Paris.
  - a Gladiolus. 702
  - b Roses. 705
- 4a Lacharme, Fr., Lyons.—A collection of roses; thirty-seven varieties originated and grown by exhibitor. 705
- 4b Allegaître, Lyons.—New zonal double geraniums, originated and grown by exhibitor. 708
- 4c Sisley, Jean, Lyons.—New zonal geraniums, originated and grown by exhibitor. 708
- 5 Vilmorin, Andrieux, & Co., Paris.—Seeds, flowers, and vegetables. 709

## Hot-Houses, Conservatories, Graperies.

- 6 Roempler, L., Nancy.—Hot-house plants. 710
- 7 Pinal, C. P., Paris.—Application of electricity to germination and fructification. 713

- 8 Lichtenfelder, Paris.—Monumental hot-houses. 715

## Garden Tools, Accessories of Gardening.

- 9 Couette, La Briche, Seine.—Portable tents, kiosks, and sheds; folding arm-chairs, beds, etc. 722
- 10 Durenne, A., Paris.—Monumental fountain. 722
- 11 Lichtenfelder, Paris.—Garden furniture; elastic seats; iron gates and trellises. 722
- 12 Thiry, J., Jr., Paris.—Trellises and galvanised iron fences. 722
- 13 Walcker, W., Paris.—Garden seats. 722

## Garden Designing, Construction, and Management.

- 14 Bonvoisin, A., Paris.—Garden plans. 730
- 15 DuViviera, F., Paris.—Park and garden plans; books on parks and gardens. 730
- 16 Vilmorin, Andrieux, & Co., Paris.—Photographs of flowers, vegetables, and plants; samples of seeds. 730
- 17 Ratinat, Paris.—Rocky grotto. 733

# GERMANY.

## Garden Designing, Construction, and Management.

### Garden Designing, Construction, and Management.

2 Eichler, Gustav, Sans Souci.—Plans for gardens.

79

# AUSTRIA.

## Garden Designing, Construction, and Management.

### Garden Designing, Construction, and Management.

1 Pohl, Charles, Austria.—Standard currants and gooseberries.

79

# NETHERLANDS.

## Fruit Trees, Ornamental Plants, Flowers, Designing.

### Ornamental Trees, Shrubs, and Flowers.

1 Galesboot, J. P. R., Amsterdam.—Fruit trees. 700

2 Boer, W. C., Boskoop.—Ornamental trees and shrubs. 700

3 Kreilage, J. H., Haarlem.

4 Bulbs. 700

5 Collection of gladiolus, etc. 700

4 Nes, A. P. van, Boskoop.—Trees, shrubs, and flowers. 700

6 Groenewegen, A. C., Haarlem.—The flowers of Haarlem. 79

### Garden Designing, Construction, and Management.

7 Nes, A. P. van, Boskoop.—Trained fruit trees. 734

8 Galesboot, J. P. R., Amsterdam.—Trained fruit trees. 734

# SWEDEN.

## Garden Tools.

### Garden Tools, Accessories of Gardening.

1 Von Essen, H. H., Baron, Tidaholm.—Gardeners' Scissors.

735

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.



# ITALY.

## Garden Decoration.

### Garden Tools, Accessories of Gardening.

- 1 Foley, Margaret A., Rome.—Marble Fountain.

700

# LUXEMBURG.

## Ornamental Trees.

### Ornamental Trees, Shrubs, and Flowers.

- 1 Suppart & Netting, Limpertsberg, near Luxemburg.—Rose trees.

705

# HAWAII.

## Ornamental Trees.

### Ornamental Trees and Shrubs.

- 1 Hawaiian Islands.—Ferns.

707

# ARGENTINE REPUBLIC.

## Ornamental Plants, Designs.

### Ornamental Trees, Shrubs, and Flowers.

- 1 Provincial Commission, Province of Santiago del Estero.—Cacti. 706  
2 Puente, Diego de la, Province of Corrientes.—Caraguata plant. 706  
3 Geloe, Martin, Province of La Rioja.—Scarlet oak, coccus cacti. 706

- 4 Provincial Commission, Province of Mendoza.—Cacti. 706

- 5 Provincial Commission, Province of Cordoba.—Cacti. 706

### Garden Designing, Construction, and Management.

- 6 Forkel, F., Province of Buenos Ayres.—Projected plan of the park "3d of February." 730

# SPAIN.

## Ornamental Trees, Shrubs, Flowers, Garden Designing.

### Ornamental Trees, Shrubs, Flowers, and Floral Designs.

- 1 Lachaume, Jules, Havana, Cuba.—  
Collection of plants, cactus, new plants. 706

### Hot Houses, Conservatories, Grape- ries, and their Management.

- 2 Lachaume, Jules, Havana, Cuba.—  
Agaves, euphorbias. 710

- 3 Poey, Juan, Havana, Cuba.—Forty  
plants presented to the U. S. Centennial  
Commission. 720

### Garden Designing, Construction, and Management.

- 4 Lachaume, Jules, Havana, Cuba.—  
a Physiology of plants. 725  
b Rustic and stone work. 733

# PHILIPPINE ISLANDS.

## Ornamental Trees and Shrubs.

### Ornamental Trees and Shrubs.

- 1 Philippine Islands.—Ferns. 74

## No. 170. HORTICULTURAL ANNEX.

North of Horticultural Hall. Constructed of wood and iron, in the form of a tent and covered with canvas. Designed for the exhibition of flowers and plants during the season.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14

# THE American Newspaper Union.

A. J. AIKENS, President.

New York Newspaper Union, 148 and 150 Worth St., New York.	}	315 Newspapers, \$3.00 per line, per week.			
Chicago Newspaper Union, 114 Monroe St., Chicago.		350	"	\$3.50	" "
Milwaukee Newspaper Union, 365 East Water St., Milwaukee.	}	120	"	\$1.25	" "
Aikens Newspaper Union, 143 Race St., Cincinnati.					
Southern Newspaper Union, 227 Second St., Memphis, Tenn.	}	200	"	\$2.00	" "
St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.					
		145	"	\$1.50	" "
		73	"	\$ .75	" "

## THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed *co-operative* for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, *with advertisements*, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canada, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

## The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least *one hundred copies every year to each square mile of the settled portions of the United States*.

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

New England . . . . .	78	Illinois . . . . .	117	Nebraska . . . . .	15
New York . . . . .	101	Michigan . . . . .	86	Missouri . . . . .	17
New Jersey . . . . .	27	Wisconsin . . . . .	98	Georgia . . . . .	10
Pennsylvania . . . . .	65	Tennessee . . . . .	89	Alabama . . . . .	32
Virginia . . . . .	24	Kentucky . . . . .	29	Louisiana . . . . .	11
No. and So. Carolina . . . . .	24	Minnesota . . . . .	79	Mississippi . . . . .	29
Ohio . . . . .	122	Iowa . . . . .	85	Other States . . . . .	46
Indiana . . . . .	81				

## AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being *seven hundred thousand seven hundred and thirty copies* (700,730).

SEND TO EITHER OFFICE FOR A CIRCULAR.

# PH. J. LAUBER'S Centennial Restaurant

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## IMPORTER OF WINES.

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Corner of Belmont and Fountain Avenues,  
NEAR THE LAKE

## FRENCH RESTAURANT, LES TROIS FRÈRES PROVENCAUX.

The same which had such a great success in the Vienna  
Exhibition, in 1873.

**CH. VERDIER,**

of the MAISON DORÉE, of Paris, Proprietor.

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Packers who use it, to preserve Hams and Bacon in the finest possible condition,  
and to impart an unusually fine color and appearance to the fat; and its great  
purity makes it especially valuable for the curing of Butter and Cheese. It  
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# STATISTICAL APPENDIX.



# STATISTICAL APPENDIX.

## UNITED STATES.

THE United States of America occupy the entire width of the central portion of North America, between latitude  $24^{\circ} 30'$  and  $49^{\circ}$  north, and from longitude  $66^{\circ} 50'$  and  $124^{\circ} 30'$  west. They are bounded, north, by New Brunswick, Canada (from which they are separated by the river St. Lawrence and the great lakes), and British Columbia; on the south, by Mexico and the Gulf of Mexico; east, by the Atlantic; and west, by the Pacific Ocean. Their greatest breadth, from Cape Cod, on the Atlantic, to the Pacific, near the parallel of latitude  $42$  degrees, is about 2600 miles. Their greatest length, from the northern boundary of Maine to Key West, in Florida, is about 1600 miles. Their mean length, from east to west, is about 1600 miles, and from north to south about 1300 miles. Their area, according to calculations founded on the report of the Commissioner of the General Land Office, for 1867, is 3,057,407 square miles, or 1,956,740,480 acres. This, however, is exclusive of the district of Alaska, in the extreme northwest of the continent, purchased from Russia, and comprising 577,390 square miles, or 369,529,600 acres. Including Alaska, the entire area of the United States and territories is 3,634,797 square miles.

Three mountain ranges, the Appalachian chain towards the east, the Rocky Mountains in the centre, and the Sierra Nevada in the west, divide the United States into four great regions. The first of these is the Atlantic slope, or all that portion lying east of the Appalachian or Alleghany range; the second, lying between the Appalachian and the Rocky Mountains, is known as the basin of the Mississippi and Missouri; the third is the country between the Rocky Mountains on the east and the Sierra Nevada on the west; the fourth extends from the Sierra Nevada to the Pacific Ocean, and is known as the Pacific slope.

The Appalachian or Alleghany mountains extend from the State of Mississippi northeast through the States of Alabama, Georgia, Tennessee, North Carolina, Virginia, Pennsylvania, New York, and Vermont, for about 1200 miles, at a variable distance of from 70 to 300 miles from the Atlantic coast, and with an average breadth of about 100 miles. Their mean height is from 2000 to 3000 feet, half of which consists in the elevation of the mountains over the adjacent plains, and the rest in the elevation of these plains above the sea. The White Mountains of New Hampshire, belonging to this chain, reach a height of 6226 feet, and the Black Mountain, of North Carolina, is 6732 feet above the level of the sea. The Rocky Mountains are a prolongation of the Mexican Cordillera, and some of their highest peaks attain to between 12,000 and 15,000 feet above the level of the sea. Their average altitude is about 8500 feet. The Sierra Nevada, or Snowy Mountains, are  $10^{\circ}$  to  $12^{\circ}$  west of the Rocky Mountains. Under different names, and with different altitudes, this range extends from the peninsula of lower California to Alaska, some of its passes being about 9000 feet, and its highest summits about 16,000 feet above the level of the sea.

The rivers of the United States are of great magnitude and importance. Of those flowing east and south the principal are the Mississippi and Missouri, which, with their tributaries, the Ohio, Arkansas, Red, Yellowstone, and Nebraska rivers, give to the interior an extent of inland navigation and a facility of communication unequalled on any other continent. Among the principal rivers flowing into the Atlantic, are the Hudson, Delaware, Susquehanna, Potomac, Savannah, and St. Johns. The Columbia, Sacramento, and Colorado flow into the Pacific Ocean. The Mississippi,

Alabama, Colorado (of Texas), and Rio Grande (the last named forming the boundary between Texas and Mexico), empty into the Gulf of Mexico. The area of the water-basins has been estimated as follows: Rivers flowing into the Pacific, 644,040 square miles; into the Atlantic, 488,877; into the Gulf of Mexico, 1,683,325 square miles, of which 1,257,457 are drained by the Mississippi-Missouri rivers. The coastline on both oceans has a length of about 13,200 miles, excluding the numerous bays and sounds, besides 3600 miles on the great northern lakes.

The following table shows the area and population of each State and Territory:

STATES.	POPULATION IN 1870.	AREA IN SQUARE MILES.
Alabama, . . . . .	996,992	50,722
Arkansas, . . . . .	484,471	52,198
California, . . . . .	560,247	188,981
Colorado, . . . . .	39,864	104,000
Connecticut, . . . . .	537,454	4,750
Delaware, . . . . .	125,015	2,120
Florida, . . . . .	187,748	58,268
Georgia, . . . . .	1,184,109	58,000
Illinois, . . . . .	2,539,891	55,410
Indiana, . . . . .	1,680,637	33,809
Iowa, . . . . .	1,194,020	55,045
Kansas, . . . . .	304,399	81,318
Kentucky, . . . . .	1,321,011	37,680
Louisiana, . . . . .	726,915	41,346
Maine, . . . . .	626,915	35,000
Maryland, . . . . .	780,894	11,124
Massachusetts, . . . . .	1,457,351	7,800
Michigan, . . . . .	1,184,059	56,451
Minnesota, . . . . .	439,706	83,531
Mississippi, . . . . .	827,922	47,156
Missouri, . . . . .	1,721,295	65,350
Nebraska, . . . . .	122,993	75,995
Nevada, . . . . .	42,491	104,125
New Hampshire, . . . . .	318,300	9,280
New Jersey, . . . . .	906,096	8,320
New York, . . . . .	4,382,759	47,000
North Carolina, . . . . .	1,071,361	50,704
Ohio, . . . . .	2,665,260	39,964
Oregon, . . . . .	90,923	95,274
Pennsylvania, . . . . .	3,521,951	46,000
Rhode Island, . . . . .	217,353	1,306
South Carolina, . . . . .	705,606	34,000
Tennessee, . . . . .	1,258,520	45,600
Texas, . . . . .	818,579	274,356
Vermont, . . . . .	330,551	10,213
Virginia, . . . . .	1,225,163	38,348
West Virginia, . . . . .	442,014	23,000
Wisconsin, . . . . .	1,054,670	53,924
ORGANIZED TERRITORIES.		
Arizona, . . . . .	9,658	113,916
Dakota, . . . . .	14,181	150,932
District of Columbia, . . . . .	131,700	64
Idaho, . . . . .	14,999	86,294
Montana, . . . . .	20,595	143,776
New Mexico, . . . . .	91,874	121,291
Utah, . . . . .	86,786	84,476
Washington, . . . . .	23,955	69,994
Wyoming, . . . . .	9,118	97,883
TERRITORIES NOT ORGANIZED.		
Alaska, . . . . .		577,340
Indian, . . . . .		68,991
Total, . . . . .	38,558,351	3,602,424



In a country extending through  $24^{\circ}$  of latitude, and nearly 60 of longitude, the climate varies considerably. In the north, along the British frontier, the winter is very severe; during this season the snow is sufficiently abundant in New England to admit the use of sleighs, and the ice on the rivers strong enough to bear the passage of horses and wagons. As far south as Pennsylvania and New Jersey, the thermometer falls, in winter, below zero; rising, in summer, to nearly  $100^{\circ}$  Fahr. Along the Atlantic coast, between latitude  $41^{\circ}$  and  $45^{\circ}$ , the climate is colder in winter and warmer in summer, by nearly  $10^{\circ}$ , than in those parts of Europe which are under the same parallels. Snow, however, rarely falls south of latitude  $30^{\circ}$ , nor is it frequently seen south of the Potomac, except on mountains. The mean annual temperature of Albany is about  $49^{\circ}$ ; of New York and Cincinnati, about  $51^{\circ}$ ; of Philadelphia,  $54^{\circ}$ ; of Natchez,  $65^{\circ}$ , and of Cantonment Brooke, in Florida,  $72^{\circ}$ . The temperature along the Pacific is much higher than in corresponding latitudes on the eastern coast.

The Mississippi valley is very fertile. In the Eastern States there still exist large forests of valuable timber, such as beech, birch, maple, oak, pine, spruce, elm, ash, walnut; and, in the South, live-oak, water-oak, magnolia, palmetto, tulip tree, cypress, etc., remnants of the wooded region which formerly extended over the whole Atlantic slope, but into which great inroads have been made by advancing civilization. Apples, pears, cherries, and plums flourish in the North; peaches, melons, and grapes in the Middle States; pineapples, pomegranates, figs, almonds, and oranges in the South. Maize is grown from Maine to Louisiana, and wheat throughout the Union; tobacco as far north as Connecticut, and in the Western States south of Ohio. There is not much cotton raised north of  $37^{\circ}$ , though it grows as far north as  $39^{\circ}$ . Rice is cultivated in South Carolina, Georgia, Louisiana, and as far north as St. Louis, Mo. The sugar-cane grows as high as  $33^{\circ}$ , but does not thoroughly succeed beyond  $31^{\circ}$   $30'$ . The vine and mulberry tree grow in various parts of the Union; oats, rye, and barley throughout the North and the mountainous parts of the South; and hemp, flax, and hops in the Western and Middle States. The following figures, taken from the report of the ninth census (1870), will convey an idea of the extent of the annual productions of agriculture:

Spring wheat, . . . . .	112,549,733 bushels
Winter wheat, . . . . .	175,195,893 "
Rye, . . . . .	16,918,795 "
Indian corn, . . . . .	760,944,549 "
Oats, . . . . .	282,107,157 "
Barley, . . . . .	29,761,305 "
Buckwheat, . . . . .	9,821,721 "
Rice, . . . . .	73,635,021 pounds
Tobacco, . . . . .	262,735,341 "
Cotton, . . . . .	3,011,996 bales
Peas and beans, . . . . .	5,746,027 bushels
Irish potatoes, . . . . .	143,337,473 "
Sweet potatoes, . . . . .	21,709,824 "
Wine, . . . . .	3,092,369 gallons
Hay, . . . . .	27,316,048 tons
Clover seed, . . . . .	639,657 bushels
Grass seed, . . . . .	583,188 "
Sugar (from cane), . . . . .	87,043 hhds
Maple sugar, . . . . .	28,443,645 pounds
Molasses, . . . . .	23,564,469 gallons
Dairy Products.—Butter, . . . . .	514,092,683 pounds
Cheese, . . . . .	53,492,153 "
Milk sold, . . . . .	235,500,599 gallons
Wool, . . . . .	100,102,387 pounds
Wax, . . . . .	631,129 "
Honey, . . . . .	14,702,815 "

The same report gives the cash value of farms in the United States at \$9,262,803,861; of farming implements and machinery, at \$336,878,429; live stock, at \$1,525,276,457.

Total estimated value of all farm productions, including betterments and additions to stock, \$2,447,538,658. Value of orchard products, \$47,335,189; products of market gardening, \$26,719,229.

There were, at the same time, 8,690,219 horses, 28,074,582 cattle, 28,477,951 sheep, and 25,184,540 hogs.

Except a few small isolated fields, all the bituminous coal in the United States lies west of the Appalachian chain, where a vast series of coal beds stretch from the mountains west through Ohio, Indiana, and Illinois, parts of Kentucky and Alabama, into the State of Missouri, and as far as two hundred miles beyond the Mississippi. Anthracite coal is found most extensively in Pennsylvania; also in Western Virginia and the eastern portion of Ohio and Illinois. The oil-wells of northwestern Pennsylvania contain apparently inexhaustible stores of mineral oil or petroleum. Numerous salt-springs exist in New York, Virginia, Pennsylvania, and the Western States. Iron is distributed most abundantly through the coal measures in Pennsylvania, Ohio, Virginia, and Tennessee, the ore containing from 25 to 33 per cent. of metal. Iron ore also abounds in the Northwestern States; and that found in one part of Vermont yields 78 per cent. of iron. A large proportion of the ore found in this part of the Union is magnetic. Lead is found in various places, but more especially in Missouri, Wisconsin, and Illinois. In some parts of Wisconsin this ore yields from 60 to 70 per cent. of lead. Large deposits of copper have been found in Michigan, in the Lake Superior region. Gold, in large quantities, and silver, have been found in the States and Territories west of the Rocky Mountains. Gold has also been found in Virginia, the Carolinas, Georgia, and Tennessee. Quicksilver, zinc, manganese, with lime and building stone, are the other chief mineral products. The following figures are from the Statistics of Mining, Table VIII, Report of the Ninth Census (1870):

	VALUE OF PRODUCTS.
Anthracite coal, . . . . .	\$38,495,745
Bituminous coal, . . . . .	35,029,247
Copper, . . . . .	5,201,312
Gold, placer mined, . . . . .	7,266,613
" hydraulic mined, . . . . .	2,508,531
Quartz, gold and silver bearing, . . . . .	16,677,508
Iron ore, . . . . .	13,204,138
Lead, . . . . .	736,004
Petroleum, . . . . .	19,304,224

The mechanical and manufacturing establishments of the Union, in 1870, numbered 252,148, using steam-engines of 1,215,711 horse-power and 1,130,431 horse-power in water-wheels, and employing 2,053,996 hands. The amount of capital invested is \$2,118,208,769; annual wages, \$775,584,343; material used, \$2,488,427,242, and the total products \$4,232,325,442. The chief manufacturing States are Pennsylvania, New York, Massachusetts, Ohio, Illinois, New Jersey, Connecticut, and Rhode Island.

The importations for the year ending June 30th, 1875, were:

Merchandise, . . . . .	\$533,005,536
Gold and silver, . . . . .	20,894,217
<b>Total, . . . . .</b>	<b>\$553,899,753</b>

Foreign exports, merchandise, . . . . .	\$14,157,611
Gold and silver, . . . . .	8,275,013
<b>Total, . . . . .</b>	<b>\$22,432,624</b>

The gold value of domestic exports, during the same period, was \$583,141,220.

In the length of miles of railway open to traffic, the United States exceeds all other nations, although in the proportion of miles of railway to miles of area, it ranks below some of the smaller and more densely populated states of Europe. The following figures, from Poor's "Railway Manual," illustrate the growth of the railway system in the United States:

In 1830, there were . . . . .	23 miles in operation.
" 1840, " " . . . . .	2,818 " " "
" 1850, " " . . . . .	9,021 " " "
" 1860, " " . . . . .	30,635 " " "
" 1870, " " . . . . .	52,898 " " "
" 1874, " " . . . . .	72,623 " " "

During the year 1874, the gross earnings were \$520,466,016, of which \$379,466,935 was for freight, and \$140,999,081 for passengers. Net earnings, \$189,570,958; dividends paid, \$67,042,942.

The government of the United States is, by the Constitution, intrusted to three separate authorities, the executive, the legislative, and the judicial. The executive power is vested in a President, who is elected every four years, and is eligible for re-election. The legislative power is vested in two houses, the Senate and the House of Representatives, the President having a veto power, which may be overcome by a two-thirds vote of both houses. Two senators from each State are elected by the legislature thereof, for the term of six years; and representatives are chosen in each State, by popular vote, for two years. The number of Representatives for each State is allotted in proportion to its population, one for each 135,239.

The supreme judicial authority is vested in a Chief Justice and eight Associate Justices, who are appointed for life by the President, by and with the consent of the Senate.

The government of each State is on the same model as that of the general government. There is a governor chosen by popular vote, and a State legislature, similarly chosen, composed of two houses. Each State also has a constitution which prescribes its form of government.

The following statistics apply to the army and navy of the United States in 1875: The army consisted, July 1st, 1875, of 2204 commissioned officers, and 25,000 enlisted men; the navy of 175 vessels, with an armament of 1282 guns, 8500 men, 1254 commissioned, and 490 non-commissioned officers on the active list.

The postal service is conducted by the general government. During the fiscal year ending June 30th, 1875, it carried 601,921,520 letters, 117,215,850 stamped wrappers, 13,956,750 newspapers, and 31,094,500 postal cards. The money orders amounted to \$75,425,854.

The telegraph lines belong to private corporations. Their total length, in January, 1875, was 75,000 miles; length of wires, 165,000 miles; number of offices, 6172; number of messages transmitted during the year 1874, 13,700,000.

Education is conducted by the separate States. In general the primary schools are supported by a property tax, and nearly all the States have school funds in addition, the income of which is distributed among the towns in proportion to the number of pupils educated. The gifts with which, during late years, private individuals have endowed institutions of learning, prove a growing appreciation of the claims of the higher education.

The following statistics are collated from the report of the ninth census, 1870:

#### PUBLIC SCHOOLS.

NUMBER OF SCHOOLS.	TEACHERS EMPLOYED.			PUPILS IN ATTENDANCE.		
	MALE.	FEMALE.	TOTAL.	MALE.	FEMALE.	TOTAL.
125,059	74,174	109,024	183,198	3,120,052	3,108,008	6,228,060

The schools "Not Public" are arranged under two headings: "Classical, Professional, and Technical," and "Other Schools."

"NOT PUBLIC" SCHOOLS (Classical, Professional, and Technical).

NUMBER.	TEACHERS.			PUPILS.		
	MALE.	FEMALE.	TOTAL.	MALE.	FEMALE.	TOTAL.
Classical, etc., 2,545	7,766	5,001	12,767	148,810	106,380	255,190
Other Schools, 14,025	11,389	13,688	25,077	353,134	373,554	726,688

INCOME.

PUBLIC.	NOT PUBLIC.	
	CLASSICAL, PROFESSIONAL, AND TECHNICAL.	OTHERS.
From Taxation of Public Funds, . . . .	\$58,855,507	\$2,320,250
" Endowments, . . . . .	144,533	3,356,003
" Other Sources, including Tuition, .	5,030,633	11,999,654
	\$64,030,673	\$17,675,907
		\$13,696,146

The total number of libraries returned was 163,353, containing 44,539,184 volumes. Of these, 107,673 were private libraries, containing 25,571,503 volumes. In the opinion of the superintendent of the census, these results are "manifestly far below the truth."

The newspaper and periodical press comprised, in 1875, 7870 publications, divided as follows: Daily, 1718; tri-weekly, 80; semi-weekly, 107; weekly, 5957; bi-weekly, 24; semi-monthly, 106; monthly, 802; bi-monthly, 8; quarterly, 68.

# GREAT BRITAIN.

THE following brief table is given (approximately) of the area, population, revenue, and commerce of the British Empire. It is not possible to give the exact figures, but for all practical purposes those now given will be sufficient. The colonies which exhibit are treated under their proper names.

NAME OF COUNTRY.	AREA IN SQUARE MILES.	POPULATION.	REVENUE.	PUBLIC DEBT.	IMPORTS AND EXPORTS.
Great Britain and Ireland,	122,518	31,857,338	\$389,600,000	\$3,555,100,000	\$3,262,900,000
Indian Possessions, etc.,	1,558,254	240,000,000	243,500,000	550,310,000	472,390,000
Other Eastern Possessions,	25,264	3,150,000	10,714,000	8,766,000	160,710,000
Australasia, . . . . .	3,087,000	2,105,000	53,570,000	219,150,000	365,250,000
North America, . . . . .	3,620,500	4,000,000	21,915,000	107,140,000	209,410,000
Africa, . . . . .	250,000	1,400,000	4,870,000	7,792,000	43,830,000
West Indies, . . . . .	12,707	1,075,000	535,700	4,870,000	48,700,000
European Possessions, . .	120	160,000	1,022,700	1,217,500	73,050,000
Various settlements, . .	96,171	200,000	2,678,500	3,165,500	24,350,000
Totals, . . . . .	8,772,534	283,947,338	\$798,405,900	\$4,457,511,000	\$4,660,590,000

The *United Kingdom of Great Britain and Ireland* is the full designation of the country more generally known as Great Britain or the United Kingdom. It includes the two large islands of Great Britain and Ireland, and the adjacent smaller islands, together with the Channel Islands and the Isle of Man.

The following table exhibits the area, in English square miles, and population, according to the last census of the several constituent parts:

	AREA.	POPULATION.
England, . . . . .	50,922	21,495,131
Wales, . . . . .	7,397	1,217,135
Scotland, . . . . .	31,324	3,360,018
Great Britain, . . . . .	89,648	26,072,284
Ireland, . . . . .	32,481	5,411,476
Isle of Man, and Channel Islands, . . . . .	394	144,638
Army and Navy, and Merchant Seamen, . . . . .	122,518	229,000
		31,857,338

The island of Great Britain lies between latitude  $49^{\circ} 57' 30''$  and  $58^{\circ} 40' 24''$  north, and between longitude  $1^{\circ} 46'$  east, and  $6^{\circ} 13'$  west, and is the largest island in Europe. It is bounded on the north by the Atlantic, on the east by the North Sea, and on the south by the English Channel, and on the west by the Atlantic, the Irish Sea, and St. George's Channel. Its greatest length is about 608 miles, and its greatest breadth (from Land's End to the east coast of Kent), about 300 miles.

England, which may be roughly said to be divided from Scotland on the north by the Cheviot Hills and the Rivers Tyne and Solway, and from Wales by the Severn

and Dee, is, except on the west and north, for the most part a level country, so cultivated as to be highly productive. The other districts have mineral riches, as iron, tin, lead, copper, and coal, which make abundant amends for the poverty of their surface. Wales is generally mountainous, and also has great mineral wealth.

The greater part of the surface of Scotland is irregularly distributed into mountains and valleys, a very small proportion spreading into level plains. The eastern coast forms a waving, continuous, and rarely broken line; the western is extremely irregular, being deeply indented with bays and arms of the sea, and exhibiting steep promontories and mountainous islands. The whole country is physically divided into *Highlands* and *Lowlands*—the former comprehending the northwest, west, and central portions; the latter, generally speaking, the east coast and the country south of the Forth and Clyde.

Ireland is an island lying between  $51^{\circ} 26'$  and  $55^{\circ} 23'$  north latitude, and  $5^{\circ} 20'$  and  $10^{\circ} 26'$  west longitude. It is about 60 miles to the west of England. On three sides it is washed by the Atlantic Ocean, and on the east by the Irish Sea and St. George's Channel. Its greatest length is, from north to south, 306 miles, and from east to west 120 to 180 miles. Ireland is divided into the four provinces of Ulster, Leinster, Munster, and Connaught, which are again subdivided into 32 counties.

The geology of Great Britain is of peculiar importance. British geologists have given to the world the names whereby the various strata are known, and British rocks form the typical series of the earth's strata. The whole recognized series of stratified deposits occur in Britain, one or two only being more fully developed elsewhere; and it is only in these singular cases that the foreign equivalents are taken as the types. British geology is no less important from the influence it has had in the development of the country, its mineral wealth, especially the coal and iron, being the real sinew of Britain's wealth and power.

In the year 1874, there was produced from the ore nearly 6,000,000 tons of pig iron, value £16,476,372; and 385 ounces of gold were raised, value £1540. Copper, tin, lead, zinc, silver, and other metals brought the total value of metals produced up to £19,539,070. The aggregate value of all the minerals, metals, coal, etc., obtained in the United Kingdom in 1874, was £67,834,313. Included in this were 125,043,257 tons of coal, value £46,849,194.

The climate of Great Britain is mild and equable in a remarkable degree, the winters being considerably warmer and the summers colder than at places within the same parallels of latitude. The mean temperature of England is  $49.5^{\circ}$ , and of Scotland  $47.5^{\circ}$ .

Very few species of plants or animals are peculiar to Great Britain. The flora, for the greater part, resembles that of Germany; but in the south of England there is, as might be expected, a closer correspondence with that of the northwest of France; and some plants found in the Channel Islands and on the French coast appear nowhere in Britain but on the southwest coast of England. The mountains of Wales, Cumberland, and Scotland have a vegetation resembling that of Scandinavia more than that of the mountains of central or southern Europe. The state of the case is much the same as to the fauna. There are, however, many remarkable instances both of plants and animals, which, from these apparent relations to continental Europe, might be expected in Great Britain, and which are not indigenous to it; as, for instance, among plants, the Norway spruce, and among animals, the lemming, both common in Scandinavia. The progress of civilization and of cultivation has completely banished from Great Britain many of the animals which were once numerous, as bears, wolves, etc. On the other hand, many plants which were unquestionably introduced by man, have become thoroughly naturalized.

For administrative purposes, Great Britain with its surrounding islands (excepting the Channel Islands and the Isle of Man, which are under peculiar jurisdiction) is divided into 84 counties or shires.

The soil of Great Britain is almost exclusively devoted to the production of the two primary necessities of society,—breadstuffs (chiefly wheat, barley, and oats) and grass, roots, etc., as food for domestic animals. The annual value of the pastures and meadow hay is immense. The total extent of land returned in 1872, as being under all kinds of crops, bare fallow and grass, was 31,004,173 acres in Great Britain, 15,746,547 acres in Ireland, 88,573 in the Isle of Man, 18,026 acres in the island of Jersey, and 12,007 acres in the islands of Guernsey, Alderney, etc., making a total for the United Kingdom of 46,869,326 acres. The number of horses included in the agricultural returns was 1,808,259; the number licensed in Great Britain was 857,045; the number of others than agricultural horses exempt from license duty, was probably about 35,000; and the number belonging to the army at home may be stated at 15,000, which would bring the total number of horses in the United Kingdom up to 2,715,000. The total number of cattle returned for the United Kingdom in 1872, was 9,718,000; sheep, 32,246,000; pigs, 4,178,000.

Constabulary returns, based upon information obtained from farmers and others and received by the Boards of Guardians, show that in the year 1873, Ireland produced 469,563 quarters of wheat, 6,912,765 quarters of oats, 1,016,339 quarters of barley, 25,576 quarters of bere and rye, 48,375 quarters of beans and peas, 2,683,060 tons of potatoes, 4,429,967 tons of turnips, 515,690 tons of mangold wurzel, 278,923 tons of cabbage, 19,843 tons of flax, and 3,306,163 tons of hay. At the end of 1873, Ireland had 4,142,400 head of cattle, 4,482,053 sheep, 532,146 horses and 1,042,244 pigs.

The following table shows the condition of the textile industries of the United Kingdom, 1874:

	NO. OF FACTORIES.	HANDS EMPLOYED.
Cotton, . . . . .	2,655	479,515
Woolen, . . . . .	1,800	135,605
Worsted, . . . . .	692	142,097
Flax, . . . . .	449	128,459
Silk, . . . . .	818	45,559
Shoddy, . . . . .	125	3,431
Hemp, . . . . .	61	5,211
Jute, . . . . .	110	37,920
Hair, . . . . .	27	1,211
Hosiery and other factories, . . . . .	557	27,667
Total, . . . . .	7,294	1,006,675

The government of Great Britain is of the kind known as a "constitutional monarchy," in which the sovereign accepts of his dignity under an express agreement to abide by certain prescribed conditions. The sovereignty is hereditary in the family of Brunswick, now on the throne, and in the person of either a male or a female. The executive government of the United Kingdom is vested nominally in the crown, but practically in a committee of Ministers, commonly called the Cabinet, which has come to absorb the functions of the ancient Privy Council, the members of which, bearing the title of Right Honorable, are sworn "to advise the king according to the best of their cunning and discretion," and "to help and strengthen the execution of what shall be resolved." Though not the offspring of any formal election, the Cabinet is virtually appointed by Parliament, and more especially by the House of Commons, its existence being dependent on the possession of a majority in the latter body.

The powers of Parliament are politically omnipotent within the United Kingdom, its colonies and dependencies. It can make new laws, and enlarge, alter, or repeal those existing. Its authority extends to all ecclesiastical, temporal, civil, or military matters, as well as to altering or changing the constitution of the realm. Parliament is the highest court of law, over which no other has jurisdiction.

The budget estimates for the financial year 1875-76, laid by the Chancellor of the Exchequer before the House of Commons, April 15th, 1875, was as follows:

Total revenue, . . . . .	£75,685,000
“ expenditure, . . . . .	75,266,000
“ estimated surplus, . . . . .	£419,000

The following figures show the numerical strength of the military force in the United Kingdom in 1875:

Cavalry, . . . . .	13,358
Artillery, . . . . .	19,418
Engineers, . . . . .	4,020
Infantry, . . . . .	55,590
Total, . . . . .	92,386

The army estimates of March 31st, 1876, contain votes of money for four classes of reserves, as follows:

	MEN.
Militia, . . . . .	139,018
Yeomanry cavalry, . . . . .	15,130
Volunteers, . . . . .	161,150
Enrolled pensioners and army reserve force, . . . . .	32,000

The total force of the British army in India was stated, in the estimates of 1875-76, to amount to 63,197.

On the 1st of December, 1874, the navy consisted of 233 steamers and sailing vessels, manned by crews aggregating 60,000.

The following are the statistics for the year 1874 of the tonnage of British and foreign vessels (sailing and steam) entered and cleared at ports in the United Kingdom from and to foreign countries and British possessions:

	ENTERED.	CLEARED.	TOTAL.
British, . . . . .	14,833,644	15,256,039	30,089,683
Foreign, . . . . .	7,534,866	7,804,408	15,339,274
Total, . . . . .	22,368,510	23,060,447	45,428,957

There were, in 1874, 20,872 vessels, with crews aggregating 203,606, and of a registered tonnage of 5,864,588.

On the 1st of January, 1875, there were 16,448 miles of railway open in the United Kingdom. The statistics of capital, passengers, receipts, and working expenses for the year 1874 were as follows: Total capital paid up (shares, loans), \$2,970,456,106; number of passengers, 478,316,701; total of traffic receipts, \$277,109,238; working expenses, \$158,040,397.

The number of letters delivered in 1874 was, in England and Wales, 804,000,000, in Scotland, 90,000,000, and in Ireland, 73,000,000. Of postal cards there were 66,000,000 delivered in England and Wales; 9,000,000 in Scotland; and 4,000,000 in Ireland; total for the United Kingdom, 79,000,000.

The number of newspapers and book packets delivered in 1874 was 207,000,000 in England and Wales, 29,000,000 in Scotland, and 23,000,000 in Ireland; total, 259,000,000. The number of money orders in 1874, in the whole of the United Kingdom was 15,900,562, of the aggregate value of £26,296,441. At the end of the year the total amount of deposits held by the Post Office Savings Bank was £24,030,711.

There were 19,116,634 telegraph messages forwarded from postal telegraph stations in the year 1874. The number of post offices at the end of 1874 was 12,950. The total number of telegraph offices, at the same date, was 5600, including 1800 railway telegraph offices. The total length of the postal telegraph wires at the end of 1874 was 107,000 miles.



In England, the chief institutions for education are the ancient national universities of Oxford and Cambridge; the more recent institutions of London, Durham, and Lampeter, in Wales; the classical schools of Eton, Westminster, Winchester, Harrow, Charter House, and Rugby; Owens College, Manchester, and other colleges and schools, chiefly for physical science; the various military schools; the colleges of the dissenting denominations; the middle class schools, either started by individual teachers or by associated bodies acting as directors, to whom the teachers are responsible; and the schools of design.

For primary education, a national system has now been established. Under the Elementary Education Act for England, 1870, a popularly elected school board is established in any district where the existing schools are deficient. Schools under the act are supported by school-rates and fees, and by parliamentary grants, varying according to the number of pupils, and their proficiency, as tested by different standards of examination. They are at all times to be open to government inspection. It is left to the discretion of school boards to make education compulsory.

Scotland possesses four universities for the higher branches of education, viz.: Edinburgh, Glasgow, St. Andrew's, and Aberdeen, besides a variety of other minor colleges. The Scotch education act, 1872, is modelled after the English act, but differs from it by enacting that a school board is to be elected in *every* parish and burgh; by making it illegal for parents to omit educating their children, between five and thirteen, in reading, writing, and arithmetic; and by comprehending higher class schools.

The number of the day-schools in Great Britain, inspected in 1871, was 10,700; the daily average attendance throughout the year was 1,434,488; 1,724,689 scholars were present at inspection; 875,298 were examined; and 598,203 passed the prescribed tests. On the registers of the inspected day-schools were 2,055,312 children, of whom 517,344 were under six years of age, 1,332,229 between six and twelve, and 205,739 above twelve; 2709 night-schools, were inspected, having an average attendance of 86,206 each night. In December, 1871, there were in Great Britain 15,605 certificated teachers, 1196 assistant teachers, and 21,854 pupil teachers.

Ireland is well supplied with educational establishments, having three universities, a large number of endowed schools, and an admirable system of mixed schools.

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## NEW ZEALAND.

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NEW ZEALAND, a British colony in the South Pacific Ocean, consists of three principal islands, called, respectively, the North, South, and Stewart Islands. There are several small islets—mostly uninhabited—dependent on the colony; the chief of them are the Chatham Islands and the Auckland Islands. The New Zealand group is situated about 6500 miles west of South America, and about 1200 miles east of Australia. The entire group lies between  $34^{\circ}$  and  $48^{\circ}$  south latitude and  $166^{\circ}$  and  $179^{\circ}$  east longitude. The three principal islands extend in length 1100 miles, but their breadth is extremely variable, ranging from 46 miles to 250 miles; the average breadth being about 140 miles. The North and South Islands are separated by Cook Strait, which is crossed by steamers in about two hours.

The total area of New Zealand is about 100,000 square miles, or 64,000,000 acres.

According to a census taken March 31st, 1874, the population (exclusive of the aborigines) numbered 299,514 souls. It is estimated that the present white population (April, 1876) is about 400,000. The Maori population, according to an approximate census taken on June 1st, 1874, was 45,470.

The aborigines, called Maoris, who formerly caused much trouble, though a large number have always sided with the British, are now peacefully settling down to agricultural pursuits, and, since 1871, permanent tranquillity appears to have been established.

The New Zealand Islands are of primitive rocks and tertiary plains, but a great portion of the entire area is occupied by mountains, among which are many extinct and a few active volcanoes. The mountains are mostly clothed with evergreen forests of luxuriant growth, interspersed with fern-clad ranges, and occasionally with treeless grassy plains. Extensive and rich valleys and sheltered dales abound in the North Island; and in the east of the South Island there are many extensive plains of rich land, admirably adapted either for agriculture or cattle-breeding. Water and water-power are found in great abundance in the colony, and the numerous rivers are subject to sudden floods from the melting of the mountain snows. As a rule, however, the streams are short, and are not navigable for more than 50 miles above their mouths. The chief is the Clutha, in the South Island, and the Waikato river, in the North Island, which latter, issuing from the Taupo lake (30 miles long by 20 broad), flows in a northern direction for 200 miles, and reaches the sea on the west coast.

In the North Island, around Lakes Rotomahana and Rotorua, are a number of grand and beautiful geysers, which throw up water heated to the boiling point. The southwest coast of the South Island is indented with a number of deep sounds, of which Milford Sound is the chief. In this sound the water is unfathomable; the only way of securing a ship being to moor it, stem and stern, to the trees which overhang the water. Steamers of 2000 tons have been thus moored. The geology of New Zealand is remarkable and varied in a high degree. The mountains, which are of every variety of outline, are chiefly composed of the schist and slate-rocks, primary sandstone, and limestone. Extensive beds of coal and lignite exist; the former have been to some extent worked, and are at present being largely developed by the construction of railways and harbor works in their vicinity.

Of the whole surface extent of New Zealand, one-fourth is estimated to consist of

dense forest tracts, one-half of excellent soil, and the remainder of waste lands, scoræ hills, and rugged mountain regions. Nearly 40,000,000 acres are supposed to be more or less suitable for agriculture and cattle-breeding. The soil, though often clayey, has in the volcanic districts more than a medium fertility; but the luxuriant and semi-tropical vegetation is perhaps as much due to excellence of climate as to richness of soil. Owing to the prevalence of light and easily worked soils, all agricultural processes are performed with unusual ease. The climate of New Zealand is one of the finest in the world. The country contains few physical sources of disease; the average temperature is remarkably even at all seasons of the year, and the atmosphere is continually agitated and freshened by winds that blow over an immense expanse of ocean. In the North Island, the mean annual temperature is 57°; in the South Island, 52°. The mean temperature of the hottest month at Auckland, in the northernmost province, is 68°, and at Dunedin, in the most southern province, 58°; of the coldest month, 51° and 40° respectively. The air is very humid, and the fall of rain is greater than in England, but there are more dry days. All the native trees and plants are evergreens. Forests, shrubberies, and plains are clothed in green throughout the year, the results of which are that cattle, as a rule, browse on the herbage and shrubs of the open country all the year round, thus saving great expense to the cattle-breeder; and that the operations of reclaiming and cultivating land can be carried on at all seasons. The seasons in New Zealand are the reverse of ours; January is their hottest month, and June the coldest. All the grains, grasses, fruits, and vegetables grown in England are cultivated in the colony with perfect success, being excellent in quality and heavy in yield; while, besides these, the vine is cultivated in the open air, and maize, the taro (*Caladium esculentum*), and the sweet potato are cultivated with success in the sunny valleys of the North Island.

The temperature, it will be thus observed, is very equable, for while the summers are as cool as those of England, the winters are as warm as those of Italy. The mean annual temperature of Auckland is nearly the same as at Rome; at Wellington, nearly the same as at Milan; at Dunedin, nearly the same as at London. The official reports of the British Army Medical Department show that, where the annual mortality from all diseases out of every 1000 British soldiers quartered in the United Kingdom was 16, it was only 5 out of every 1000 in the troops quartered for more than 25 years in New Zealand. In other words, this colony appears to be peculiarly favorable to the duration of human life.

In connection with this, it may be mentioned, in order to show the redundancy of the population in New Zealand, that in 1874 the births were 40.05 per 1000 of the population, and the death rate was only 12.97 per 1000, while the marriages were 8.81 for every 1000 people.

The entire acreage under crop, in February, 1875, was 1,788,800. Of the crops, the principal were wheat, oats, barley, potatoes, and sown grass. At the same date, the number of holdings was 16,092, the population being 296,018. The average yield of wheat was, in 1875, over 28 bushels per acre.

The live stock of the colony consisted, at the census of March 1st, 1874, of 99,859 horses, 494,917 cattle, 11,704,853 sheep, 123,921 pigs, and 1,058,198 head of poultry.

Large gold fields were discovered in the spring of 1857. In the year 1874, there were 376,388 ounces of gold, of the declared value of \$7,526,655, exported from New Zealand, the average annual yield of the gold fields since 1862 being 588,072 ounces, or value of \$11,395,140, while from April 1st, 1857, to December 31st, 1875, the total quantity of gold exported was 8,025,676 ounces, valued at \$151,271,293 gold.

The principal produce of the colony is wool, 46,848,735 pounds, valued at \$14,173,475, having been exported in 1874.

The total imports of the colony during the year 1874 were \$40,609,060; the total exports, \$26,256,345.

The class of people most required in New Zealand are farmers with a small capital, carpenters, who can earn, according to their skill, from 11 shillings to 15 shillings per diem, and single women, who always gain good wages, and rarely stop in service for a long time, being greatly in demand in the matrimonial market. All classes of laborers find ready employment at remunerative rates.

By an imperial statute, passed in 1852, the legislative power is vested in the Governor and a Parliament of two chambers; the first called the Legislative Council, and the second the House of Representatives, and collectively, the General Assembly. The Legislative Council consists at present of 49 members, nominated by the crown for life; and the House of Representatives of 83 members, elected by the people for five years. Two Maoris sit in the Legislative Council, and 4 in the House of Representatives. Two of the latter also are members of the Executive Council. The Governor is assisted by an Executive Council, composed of the responsible ministers for the time being, and any others he may appoint. Members of both branches receive pay at the rate of \$787 for the session, which generally lasts three months. Every owner of a freehold worth \$250, or tenant house-holder, in the country at \$25, in the town at \$50 a year rent, is qualified to vote for members of the House, and is eligible for membership. The seat of government is at Wellington, a town of about 12,000 people, and centrally situated.

The colony is divided into nine provinces; four in the North, and five in the South Island. Each of these provinces is governed by an elected Superintendent and Provincial Council. In 1875, the General Assembly passed a bill declaring that the provincial governments should cease to exist after the close of their next session. The form of local government which is to take the place of provincial government has not been decided upon, but will probably take the shape of legislative powers.

In the year 1874, the total ordinary revenue (including provincial) was \$9,367,240, and the territorial revenue, \$5,754,500, which, with incidental receipts of \$221,320, makes the total general revenue—ordinary, territorial, and incidental—amount to \$15,343,060. The total ordinary expenditure by general and provincial governments was \$14,803,555.

Beyond the ordinary expenditure, a sum of \$13,629,465 was spent, which is charged to the loan account. The public debt of New Zealand amounted, at the end of 1874, to \$66,834,680, and as a loan expenditure is still proceeding, it is estimated that the total debt will shortly amount to about \$95,000,000. Against this there is a sinking fund already amounting to \$5,000,000, and, moreover, a large amount has been spent on reproductive works. In 1870, the sum of \$20,000,000 was authorized to be borrowed for the purposes of emigration and public works (such as railways, roads, telegraphs, water-races, bridges, etc.), besides \$5,000,000 for defence and other purposes. Since then, further large loans have been contracted for public works. To assist in the development of these works, a vast number of emigrants have been brought into the country, receiving either free passage from England or a grant of land. Railways are now being constructed throughout the islands, 260 miles being open for traffic; 420 miles under construction, of which a good deal is near completion; and 330 miles are authorized to be constructed.

Under the stimulus of the public works and emigration policy, no less than 43,965 emigrants arrived in New Zealand in 1874.

On the 31st of December, 1874, the colony had 2632 miles of telegraph lines, and 5284 miles of wires. The number of telegrams during the year was 844,301, of which total 724,582 were private, and the remainder government messages.

During the year 1874, the post office received 4,339,165 letters, and dispatched 4,719,291. The total number of newspapers received was 3,872,668, and dispatched, 2,434,024. Money orders to the number of 62,712 and the amount of \$1,315,820 were issued during 1874.

Grammar and free schools, endowed from the public revenues of the various

provinces, several colleges, and two universities, one being established in Otago and the other a corporation endowed by the general government, are the principal educational institutions.

The shipping entered in 1874 consisted of 856 vessels, with a tonnage of 399,296. Of these, 237 vessels, measuring 201,017 tons, were British; 552, measuring 170,303 tons, colonial; and 67, measuring 27,976, were foreign. Of the foreign vessels entered, 50 were American. Coasters are not included in the above statistics. In 1874 the number of vessels entered coastwise was 14,351, and their tonnage 1,353,085.

The number of individual exhibits included in this Catalogue from New Zealand is 1114.

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## NEW SOUTH WALES.

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NEW SOUTH WALES, a British colony in the southeastern portion of Australia, is bounded on the north by a line which, beginning at Point Danger, in latitude  $28^{\circ} 8'$  south, follows several lines of heights across the Dividing Range till it meets the 29th parallel, which forms the rest of the boundary westward; on the west by the 141st meridian; on the east by the Pacific Ocean; and the line separating it from Victoria on the south runs from Cape Howe, at the southeast of the island, northwest to the source of the Murray, and then along that stream, in a direction west by north, to the western boundary of the two colonies.

Its area is 323,437 square miles, and its population in 1874 was, exclusive of aborigines, 584,278. At the same date the population of Sydney, the capital, was 150,000. Within the colony of New South Wales, the mountain range, which girdles nearly the whole island, is most continuous and elevated, and is known as the Dividing Range. The section of this mountain system on the southern boundary of the colony, called the Australian Alps, rises in Mount Kosciusko to 6500 feet. From this the range extends northward, the water-shed being from 50 to 150 miles distant from the east coast, and thus divides the colony into two slopes, with two distinct water systems. The rivers on the eastern side descend with great rapidity, and in oblique tortuous courses, their channels often forming deep ravines. Many of them are navigable in their lower course for sea-going steamers. The principal are the Richmond, Clarence, Macleay, Manning, Hunter, Hawkesbury, and Shoalhaven. The numerous streams that rise on the west side of the water-shed within the colony, all converge and empty their waters into the sea through one channel within the colony of South Australia. The southern and main branch of this great river system is the Murray. The other great trunks of the system are the Murrumbidgee, which is navigable, the Lachlan, at times reduced to a string of ponds, and the Darling. The Macquarie, passing through the rich district of Bathurst, is a large tributary of the Darling, but it reaches it only in the rainy seasons. The coast line from Cape Howe to Point Danger is upwards of 700 miles long, and presents numerous good harbors formed by the estuaries of the rivers. Owing to the great extent of the colony, stretching as it does over eleven degrees of latitude, the climate is very various. In the northern districts, which are the warmest, the climate is tropical, the summer heat occasionally rising in inland districts to  $120^{\circ}$ , while on the high table-lands weeks of severe frost are sometimes experienced. At Sydney, the mean temperature of the year is about  $65^{\circ}$ . The mean heat of summer, which lasts here from the beginning of December to the 1st of February, is about  $80^{\circ}$ , but it is much modified on the coast by the refreshing sea breeze. The annual fall of rain is about 50 inches. Rain sometimes descends in continuous torrents, and causes the rivers to

rise to an extraordinary height. Sometimes the rains almost fail for five or six months in succession. Along the coast, for 300 miles from the northern boundary, the soil and climate are admirably adapted for the growth of cotton, and that plant has already been cultivated as far south as the river Manning (latitude  $32^{\circ}$  south). Farther south the climate is more temperate, and is fitted to produce all the grain products of Europe. Immense tracts of land, admirably adapted for agriculture, occur in the south-western interior; while in the southeast coast districts the soil is celebrated for its richness and fertility. In the north, the tobacco plant, the vine, and sugar-cane are grown; and pineapples, bananas, guavas, lemons, citrons, and other tropical fruits are produced. In the cooler regions of the south, peaches, apricots, nectarines, oranges, grapes, pears, pomegranates, melons, and all the British fruits are grown in perfection, and sometimes in such abundance that pigs are fed with them. Wheat, barley, oats, and all the cereals and vegetables of Europe are also grown.

In 1875, New South Wales had 22,872,882 sheep, 856,699 horned cattle, 346,691 horses, and 219,958 pigs. The total area of land under cultivation, at the same date, embraced 469,957 acres, of which there were under wheat, 166,911 acres, under barley, 3984 acres, under oats, 17,974, under rye, 1342, under maize, 119,956.

New South Wales is believed to be richer in coal than the other territories of Australia. In 1874 there were 28 mines worked, producing in the year 1,298,400 tons of coal, valued at £786,152.

The gold mines of New South Wales cover a vast area, extending chiefly over the districts called the Western Fields, the Northern Fields, and the Southern Fields. Of these the Western Fields are the most important, furnishing three-fourths of the total supply. The gold exports of 1873 consisted of 200,134 ounces, value £773,439, of gold dust and bar, and of 490 boxes, value £2,151,168, of gold coin. The yield from the copper mines, in 1873, was 6027 tons.

The total exports during the year 1874 were £12,345,603; imports, £11,293,739.

The constitution of New South Wales vests the legislative power in a Parliament of two houses, the first called the Legislative Council, and the second the Legislative Assembly. The Legislative Council consists of not less than 21 members, nominated by the crown, and the Assembly of 72 members, elected by sixty constituencies. To be eligible a man must be of age, a natural-born subject of the Queen, or, if an alien, he must have been naturalized for five years, and resident for two years before election. There is no property qualification for electors, and the votes are taken by secret ballot. The executive is in the hands of a governor, nominated by the crown, who acts under the advice of ministers responsible to Parliament.

The public revenue during 1874 was £4,664,568; the expenditure, £4,426,040. The public debt, chiefly incurred for railways and other public works, amounted, at the end of 1874, to £10,842,415.

New South Wales possesses 436 miles of railways. Of electric telegraph, there were in the colony 8000 miles of wire, at the end of 1874. Number of paid messages transmitted during 1874, 385,000; number of telegraph stations, 105.

The post office of the colony transmitted 9,300,000 letters, 4720 newspapers, and 250,000 packets in 1874.

The number of schools, public and private, in 1872, was 1464, with 106,691 pupils.

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 THE HONORABLE JACOB LEVI MONTEFIORE, of Sydney, a member of the Legislative Council of New South Wales.  
 GEORGE OAKES, ESQ., of Sydney.  
 JOSEPH JAMES PHELPS, ESQ., of Sydney, a member of the Legislative Assembly of New South Wales.  
 GEORGE RUSSELL, ESQ., of Scotland.  
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 CHRISTOPHER ROLLESTON, ESQ.  
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 CHARLES ROBINSON, ESQ., Secretary.



## VICTORIA.

VICTORIA comprises the southeast corner of Australia, at that part where its territory projects furthest into cool southern latitudes. Wilson's Promontory, to the southeast, the most southerly headland, just passes the  $39^{\circ}$  of south latitude, while the most northern point, which is at the opposite or northwest extreme, is in south latitude  $34^{\circ}$ . The longitude comprises  $9^{\circ}$ ,—between  $141^{\circ}$  and  $150^{\circ}$  east of Greenwich. To the west is the colony of South Australia, separated by the  $141^{\circ}$  of east longitude, to the north is New South Wales, separated by the line of the Murray river eastwards from  $141^{\circ}$  east longitude to its source, and thence by a straight line southeast to Cape Howe, and from Cape Howe to South Australia again the colony is bounded on the south by Bass's Strait. The extreme length is east and west, and is about 500 miles, by an extreme width north and south of 300 miles. But a remarkable indentation of both the north and south boundaries opposite each other, about the middle of the colony, reduces the breadth between the head of the Port Phillip inlet and the Murray to only 120 miles. The superficial area is 88,198 English square miles.

Although Victoria may be called mountainous, as compared with the general flatness of Australia, it has much of the quiet and peculiar scenery characteristic of that division of the world. The highest mountain in Australia, Mount Feathertop, is 6303 feet in height. The largest river, which runs throughout its entire course in Victoria, is the Gouldbourn, 230 miles long. The Murray, which winds for a distance of 630 miles along the northern boundary of Victoria, rises in New South Wales, and falls into the sea in South Australia, so that it can scarcely be called a Victorian river.

The climate is on the whole healthful and agreeable. The average temperature of Melbourne is  $57.6^{\circ}$ , about the same as that of Marseilles, Bordeaux, Bologna, Nice, and Madrid. The common summer heat is from  $65^{\circ}$  to  $80^{\circ}$ , with an occasional advance to  $90^{\circ}$ , and even to  $100^{\circ}$ , during hot winds and a dry season. The winter range is mostly from  $45^{\circ}$  to  $60^{\circ}$ . Ice occasionally occurs in the midwinter of July, but it rarely, except on elevated ground, survives the noonday sun.

The estimated population of Victoria, on the 31st of March, 1875, was returned at 810,442 by the Registrar-general.

In 1875 there were 1,011,776 acres under crops, including 332,936 acres of wheat, 114,921 of oats, 29,505 of barley, 35,183 of potatoes, 119,031 of hay, and 253,129 of green forage. The gross produce was: wheat, 4,850,165 bushels; oats, 2,121,612 bushels; barley, 619,896 bushels; potatoes, 124,310 tons; hay, 157,261 tons; wine, 577,493 gallons. The total number of horses was, in 1875, 180,254; milch cows, 241,137; horned cattle, 717,251; sheep, 11,221,036; pigs, 137,941. The manufactures of Victoria employed 25,000 persons, and the capital invested in machinery and plant was £5,000,000. The number of persons at work in the gold fields, December 31st, 1874, was 45,151, of whom 12,180, or 27 per cent., were Chinese.

The total value of the imports and exports of Victoria, including bullion and specie, for the year 1874, was as follows: Imports, £16,953,985; exports, £15,441,109. The most important, in value, of the imports are woollens, sugar, cotton, apparel and haberdashery, and tea. The two staple articles of export are wool and gold. The total exports of wool in 1874 amounted to 88,662,311 pounds, of the value of £6,373,641. The export of gold, exclusive of specie, was 1,012,153 ounces, of a declared value of £4,053,288.

The number of mercantile vessels on the register of Victoria, at the end of 1874, was 429, with a total tonnage of 70,696, and crews of 3229 men. Of these vessels 47 were steamers.

The constitution of Victoria was established by an act passed by the legislature of the colony in 1854, and subsequently confirmed by the crown. The legislative authority is vested in a parliament of two chambers—the Legislative Council, composed of 30 members, and the Legislative Assembly, composed of 78 members. A property qualification is required both for members and electors of the Legislative Council. No electoral property qualification is required for graduates of British universities, matriculated students of the Melbourne university, religious ministers of all denominations, certificated schoolmasters, lawyers, medical practitioners, and officers of the army and navy. Six members, or a fifth, of the Legislature Council must retire every two years, so that a total change is effected in ten years. The members of the Legislative Assembly are elected by universal suffrage, for the term of three years. The executive consists of a governor appointed by the crown, and a ministry which must contain at least four members of parliament, and must command a majority in the assembly. The revenue for the year 1874-75 was £4,406,906; the expenditure, £4,425,277. The public debt, incurred entirely for the construction of public works, amounted to £12,485,432 on January 1st, 1875.

Victoria has a more extensive system of railways than any other of the Australasian colonies. On the 1st of January, 1875, there were 457½ miles opened for traffic, and 427 more in course of construction. There were, in 1874, 148 telegraph stations, 4464 miles of wires. Number of telegrams forwarded during the year, 701,080. The work of the post office during the same year, 15,732,888 letters, 6,866,913 newspapers, and 1,269,822 packets. Number of post offices, 802.

The following table shows the educational condition of the population above five years of age:

	MALES.	FEMALES	TOTAL.
Able to read and write, . . . . .	264,665	209,898	474,665
Able to read only, . . . . .	30,049	36,336	66,385
Unable to read, . . . . .	25,462	26,315	51,077

The state of education among the children, between 5 and 15, showed that 846 children out of 1000 could read, 640 could read and write, and only 154 were totally uninstructed. Education in Victoria is gratuitous, secular, and compulsory, and the legislature has voted large sums for the primary education of the people.

The total number of schools is 1867, including 908 "common" schools, with an attendance of 154,353 pupils. (Furnished, in part, by the Victoria Commission.)

#### Commission from VICTORIA to the International Exhibition:

SIR REDMOND BARRY, Acting Chief Justice of the Supreme Court, President.

HON. J. J. CASEY, M. P.  
 HON. J. F. SULLIVAN, M. P.  
 HON. C. J. JENNER, M. L. C.  
 JAMES MUNRO, HON., M. P.  
 J. MCILWRAITH, ESQ.  
 L. J. SHERRARD, ESQ.  
 COUNT DE CASTELNAU.  
 HON. S. H. BINDON.  
 JAMES BOSISTO, ESQ., M. P.  
 JAS. GATEHOUSE, ESQ., Mayor of Melbourne.  
 JOHN MCINTYRE, ESQ.

J. I. BLEASDALE, D.D.  
 HON. SIR JOHN O'SHANASSY, K.C.M.G.  
 HON. SIR JAMES MCCULLOCH, M. P.  
 HON. JOHN ALEXANDER MACPHERSON, M. P.  
 HON. JOHN THOMAS SMITH, M. P.  
 LESLIE JAMES SHERRARD, ESQ.,  
 JOHN DANKS, ESQ.  
 GEORGE COLLINS LEVEY, ESQ., Secretary.

## SOUTH AUSTRALIA.

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**THE** colony of South Australia embraces 25 degrees of latitude through the centre of the continent of Australia, from the Southern to the Indian Ocean, and is bounded on the east by the colonies of Victoria, New South Wales, and Queensland, and on the west by the colony of Western Australia. Its area is 914,730 square miles, or 585,427,200 acres; being about a third of the area of the United States of America, or ten times that of Great Britain. Its population is 210,699.

Its chief exports are wool, wheat, and copper. In 1875 the exports were valued at £4,442,100—namely: of wool, £1,778,297; of agricultural produce, £1,688,035; of metals, £758,664; and of other products, £217,104. Its revenue in 1875 was £1,143,312, its people not being taxed at a higher rate than 25 shillings a head. The people have purchased land of the government to the extent of 4,634,711 acres, of which 1,400,000 are under cultivation; and the average price paid since 1845 is £1 5s. 2d. per acre. The public debt is about £3,000,000; but, as an offset, is a sum of £2,225,000 due for lands sold to occupiers, and payable within six years.

The natural wealth of the colony in healthy climate, fruitful soils, and abundant minerals, has been greatly augmented by useful and substantial improvements. In addition to numerous ports made serviceable for coasting trade, inland traffic is facilitated by 884 miles of excellent macadamized roads, which have cost over £2,000,000; and by railways of nearly an equal further cost. The public and private buildings, both in towns and country, are mostly of well-built stone, with slate or iron roofs. Gardens and orchards, pasture and arable fields cover the more settled portions of the colony, whilst over hundreds of miles outside of these some 6,000,000 sheep, 200,000 head of horned cattle, many thousands of horses, and a few hundred camels, thrive at large on the native vegetation, save that their ranches, or runs, are mostly inclosed in areas of from 5 to 50 square miles with good post and wire fencing.

The best of meat and bread, fruit and vegetables, grow in abundance in South Australia. People there live well at little cost. Labor is well rewarded. There are not, or ought not to be, any able-bodied paupers in the colony. At the savings' banks, which are guaranteed by government, the small deposits of the poorer classes approximate £800,000, on which four to five per cent. interest is paid. Immigration is promoted by annual money votes, which, through Mr. F. S. Dutton, C. M. G., Agent-General for the colony in London, supply free or assisted passages for eligible persons.

The government, the laws, and the social institutions, like the people of South Australia, have an Anglo-Saxon character. There is the fullest civil and religious freedom under a vice-regal governor, whose ministers are chosen by, and are responsible to, a majority of two houses of parliament elected by ballot, as to the larger house, of manhood suffrage alone, and, as to the smaller house, by a slightly restricted property qualification. These organizations have worked harmoniously to the contentment of the people.

Churches and schools are numerous. The facilities for acquiring real property in the colony are great, and laws well secure its quiet enjoyment. The public lands are mostly sold on credit: one-tenth per cent. is paid down as interest on the purchase money, which is not less than twenty shillings per acre. The balance is deferred to the sixth year, a second ten per cent. on the purchase money having been paid on the third year as interest. At the sixth year half the

balance may be renewed for four years at four per cent. if needed; but that the State may secure certain benefit from the sale of its lands under a credit system, the purchaser is bound to effect annual improvements. All metals, precious or other, go to the purchaser. The title to real estate from the crown is by registration, of which the purchaser gets a certificate in simple form. This system is popular, for it is ready and inexpensive at the outset, and is returnable to the registration office for record on it of all subsequent dealings, or for substituted certificate, or certificate as needed, in the event of sales. At the close of 1874 the value of landed property, which had passed under it, amounted to £9,260,186. Adjoining colonies have adopted this law.

The settled portions of the colony of South Australia are sectioned off into counties, and these counties, when arable cultivation requires it, are subdivided into hundreds, whose municipal governing bodies can be elected for local public works and education. Outside the hundreds, in the southern portion of the colony, the public lands are left for purely pastoral occupation, for which fourteen or twenty-one years' leases can be procured at moderate rents, regulated much by distance from ports of shipment, except that, both as to public lands inside or outside the hundreds, rights to search for and work minerals are readily granted. The rent of a mining lease is fixed at ten shillings an acre per annum, on a fourteen years' term, renewable.

For the northern territory of South Australia, with its tropical climate, the land laws are modified. Land there is open for selection and sale at 7s. 6d. per acre, or for lease over ten years at 6d. per acre per annum. And, for the special growth of sugar, cotton, tea, rice, and tobacco, selections varying from 320 to 1280 acres can be made at a rental of 6d. per acre per annum for five years, when, if the land has been inclosed and one-half under cultivation, a free grant is procurable.

In 1872 South Australia erected 1973 miles of telegraph wire across her territory, and, at a cost of £350,000, connected Australia with India and Europe.

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Commission from SOUTH AUSTRALIA (ADELAIDE) to the International  
Exhibition :

HIS EXCELLENCY, SIR ANTHONY MUSGRAVE, C. M. G., Chairman.

HON. W. EVERARD, Commissioner of Crown Lands.	DR. SCHOMBURGH, D. P., J. P.
HON. H. E. BRIGHT, M. L. C., J. P., Commissioner of Public Works.	CALEB PEACOCK, ESQ., J. P.
HON. JOHN CROZIER, M. L. C., J. P.	R. D. ROSS, ESQ., M. P., J. P.
HON. WENTWOOD CAVANAUGH, ESQ., M. P., J. P.	W. E. SMITH, ESQ., M. P., J. P.
JOSIAH BOOTHLY, ESQ., J. P.	WALTER HACKE, ESQ.
E. W. ANDREWS, ESQ., J. P.	J. A. HOLDEN, ESQ., J. P.
S. DAVENPORT, ESQ., J. P., Special Commissioner.	JOSEPH CROMPTON, ESQ.
GEORGE MCEWEN, ESQ., J. P.	S. V. PIZEY, ESQ.
	F. G. WATERHOUSE, ESQ.
	W. A. E. WEST ERSKINE, ESQ.
	C. J. COATES, ESQ., Commissioner and Honorary Secretary.

## CAPE OF GOOD HOPE.

THE colony of the Cape of Good Hope is bounded north and northeast by the Orange river, which divides it, in parts of its course, from the Free State; east and northeast by the Tees, a small tributary of the Orange, the Stormbergen Mountains, and the Indwe and Great Kei, which two rivers separate the Cape Colony from Kaffirland; on the south it is bounded by the Indian Ocean, and on the west by the Atlantic. Latitude  $28^{\circ} 10'$  to  $34^{\circ} 51'$  south; longitude  $16^{\circ} 20'$  to  $28^{\circ} 20'$  east. The breadth on the greatest meridian is about 450 miles, the length on the largest parallel about 600 miles, and the total area is about 201,000 square miles. The colony is generally considered as forming two sections, the Western and Eastern Provinces, each divided into 16 electoral divisions, which are again subdivided for fiscal and magisterial purposes. The first regular census (1865) gave the following result as to the numbers of the population:

White, or European, . . . . .	181,592
Hottentot, . . . . .	81,598
Kaffir, . . . . .	100,536
Other colored, . . . . .	132,655
	<hr/> 496,381

Since the census, the annexation of British Kaffraria, Basutoland, Fingoland, and Normansland, added 5847 whites and 273,930 colored to the population, making the total, 776,158.

Hydrographically, the country, as a whole, is decidedly superior to most parts of Africa. The seaboard presents several comparatively safe and commodious harbors. Of these, however, two—Table Bay in the Western Province, and Algoa Bay in the Eastern—absorb nearly the whole of the foreign trade. Hardly any of the ports command navigable communication with the interior.

The highest range of mountains within the colony is 9000 feet above the sea. The dividing ridge runs parallel with the coast at a distance of 100 miles. Between the principal range and the sea, on the east, there are two other ranges, less continuous and regular; the intermediate one generally more distant from the first than they are from each other.

The prevalent winds—the southeast in summer, and the northeast in winter—mitigate each the rigor, whether heat or cold, of its own season; and, in spite of occasionally sudden and great changes, render the temperature, as a whole, one of the most salubrious and delightful in the world. The mean temperature of the year at Cape Town is about  $68^{\circ}$  F.; that of the coldest month being  $57^{\circ}$ , and of the hottest,  $79^{\circ}$ .

The value of the total exports and imports of the Cape Colony, including British Kaffraria, was, in 1873, as follows:

Imports, . . . . .	£5,451,927
Exports, . . . . .	4,011,327

Among the articles of export, wool is the most important, forming nearly nine-tenths of the total. Among the other leading items are copper ore, feathers, and sheepskins.

There were, at the end of 1865, in the colony, 692,514 head of cattle and 9,836,065 sheep. The sheep farms are often of very great extent, comprising from 3000 to 15,000 acres and upwards. Those in tillage are comparatively small. The graziers are, for the most part, proprietors of the farms they occupy, paying a quit rent to government, as the original owner of the soil.

#### COMPARISON OF TOTAL STOCK IN THE COLONY IN 1865 AND 1875.

	1865.	1875.
Horses . . . . .	228,465 . . . .	207,318
Mules and asses . . . . .	24,267 . . . .	29,517
Draught oxen . . . . .	249,291 . . . .	398,825
Other cattle . . . . .	443,004 . . . .	698,681
Wooled sheep . . . . .	8,426,619 . . . .	10,064,289
Other sheep . . . . .	1,465,883 . . . .	944,050
Angora goats . . . . .	121,432 . . . .	972,733
Common goats . . . . .	2,147,807 . . . .	2,122,808
Pigs . . . . .	78,578 . . . .	110,489
Ostriches . . . . .	80 . . . .	22,257

There were lines of railways of a total length of 134 miles at the end of 1874, and a system of other main lines, as well as of telegraphs, was under consideration by the government.

The constitution vests the executive in the Governor and an Executive Council, composed of certain officeholders appointed by the crown. The legislative power rests with a Legislative Council of 21 members, and a House of Assembly of 66 members.

The income and expenditure of the colony, during 1873, were as follows:

Revenue, . . . . .	£2,078,220
Expenditure, . . . . .	2,159,658

Included in the above receipts is a loan of £859,000 for public works. The public debt, on the 1st of January, 1875, amounted to £1,723,144.

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Commissioner from the CAPE OF GOOD HOPE to the International Exhibition:

MR. H. CRAWFORD COATES, Executive Commissioner.

## JAMAICA.

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JAMAICA, one of the West India Islands, and by far the most important of those belonging to Great Britain, is about 90 miles to the south of Cuba, and stretches in north latitude between  $17^{\circ} 40'$  and  $18^{\circ} 30'$ , and in west longitude between  $76^{\circ} 15'$  and  $78^{\circ} 25'$ . Area, 6900 square miles; population (in 1871), 506,154, of whom less than three per cent. were white. The greatest length of the island is 150 miles, and its greatest breadth, 50 miles. It is traversed from east to west by a heavily timbered ridge called the Blue Mountains, which rises to about 7000 feet. From this range at least 70 streams descend to the north and south shores; one of these, the Black river, affords for small craft a passage of about 30 miles into the interior. The others, owing to the shortness and declivity of their course, are not navigable. Excellent harbors are everywhere to be found. The best of these is formed by a deep and capacious basin, in the southeast quarter of the island, which washes the most spacious and fertile of the plains between the hill country and the coast. Around this inlet, and within a few miles of each other, are all the considerable centres of population, Port Royal, Kingston, and Spanish Town.

The climate varies considerably, the torrid belt of the coast gradually passing into the temperate region of the central heights. The latter is said to be remarkably favorable to longevity; and, after having long been a retreat for the residents themselves, it has lately begun to attract invalids from the United States. To contrast two positions—the one near Kingston harbor, the other at an intermediate elevation of 4000 feet—their annual mean temperature are stated to be respectively  $81^{\circ}$  F. and  $68^{\circ}$  F.

In 1871 the chief exports were in value as follows: Sugar, £502,193; rum, £271,267; coffee, £147,562; logwood, £115,423; while the chief imports were: Flour, £135,500, and salt-fish, £92,801. During the same year the revenue amounted to £434,564; the expenditure to £430,154.

The sum of £19,403 was devoted to the support of the schools during the year 1872.

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Commissioner from JAMAICA to the International Exhibition :  
WM. ROBERT THOMSON, ESQ., Kingston.

## BAHAMAS.

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A CHAIN of islands lying between  $21^{\circ} 42'$  and  $27^{\circ} 34'$  N. lat., and  $72^{\circ} 40'$  and  $79^{\circ} 5'$  W. long. The group is composed of about twenty inhabited islands and an immense number of islets and rocks. The principal islands are New Providence (containing the capital, Nassau), Abaco, Harbor Island, Eleuthera, Inagua, Mayaguana, St. Salvador, Andros Island, Great Bahama, Ragged Island, Rum Cay, Exuma, Long Island, Crooked Island, Acklin Island, Long Cay, Watling's Island, the Berry Islands, and the Biminis. In 1848 the Turks and Caicos Islands were separated from the other Bahamas and formed into a distinct government, under the government-in-chief of the governor of Jamaica. The Turks and Caicos Islands lie between  $21^{\circ}$  and  $22^{\circ}$  N. lat., and  $71^{\circ}$  and  $72^{\circ} 37'$  W. long.

There are ten colonial custom-houses and ports of entry in the government of the Bahamas—viz., Nassau, Abaco, Eleuthera, Harbor Island, Exuma, Rum Cay, Long Island, Long Cay, Inagua, and Ragged Island. Considerable quantities of pineapples, oranges, and sponges are exported, chiefly to England and the United States. The pineapple crop is very precarious. The industry of salt-raking has ceased to be remunerative, owing to the duties imposed on salt by the United States. Experiments in coffee-planting and other branches of industry have been commenced under the patronage of the present governor.

The public expenditures for 1874 were £37,283; receipts during the same year, £38,374. The total public debt in 1873 was £65,081.

In 1874 the imports were valued at £183,993, and the exports at £130,293. The census of 1871 gave the population of the colony as 39,162.

The colony's staples are salt, fruit, sponge, barks, dye and furniture woods, guano and straw, turtle-shell, fish-scale, and shell-work.

The articles on exhibition fairly represent the productions and manufactures of these islands, and both might be indefinitely extended. But it is not the commercial position of the Bahamas only which should make a knowledge of them general. Their equality and wonderful salubrity of climate commend them to all who seek a genial, healthy, life-giving atmosphere. As a winter home for the afflicted, Peter Henry Bruce wrote nearly a century and half ago, "It is no wonder the sick fly hither for relief, being sure to find a cure here." Modern travelers also testify that, as a resort from damp and cold to sunshine and summer, for those who require change and climatic benefit, the Bahamas offer peculiar advantages. The heat is tempered by an ocean breeze of softness and purity seldom experienced elsewhere. Tropical flowers gladden the eye, and the luscious pineapple, orange, and melon tempt the palate with their freshness and beauty. Fish abound in the clear pellucid waters surrounding these islands, and the northern fowl seek a home on the lakes. In a word, the Bahamas seem by nature fitted as a grand sanitarium for the afflicted from the North American continent, and as a most desirable winter resort for all who wish to escape the rigors of the northern season.

(The above data have been derived from the special Catalogue of the British section.)



## BERMUDAS,

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OR Somers' Islands, are a cluster of about one hundred small islands, situated on the western side of the Atlantic Ocean, in lat.  $32^{\circ} 15'$  N. and long.  $64^{\circ} 51'$  W., at a distance of about 580 miles from the nearest land—viz., Cape Hatteras, in North Carolina. Fifteen or sixteen of these islands are inhabited; the rest are of inconsiderable size, the largest, or Bermuda proper, containing less than twenty square miles of land, and nowhere exceeding three miles in breadth.

The islands extend from N.E. to S.W. in a curved line for about twenty miles, bending inward at both extremities, so as to enclose spacious and secure harbors.

Besides the main island, on which the town of Hamilton, the present seat of government, is situated, the principal islands are St. George's, where the ancient town of St. George, the former capital, stands; Ireland Island, where the dockyard is established; Boaz and Watford Islands, occupied entirely by a military detachment, formerly a convict establishment; Somerset, St. David's, Smith's, Cooper's, Nonsuch, Godet's, Port's, and River's. With the exception of one break between Somerset and Watford Islands, there is continuous communication by bridges from St. George's to Ireland Island. The climate has been long celebrated for its mildness and salubrity. The islands produce arrowroot of a fine quality, and an indigenous cedar of great durability, well adapted for ship-building and house-timber. A few whales are occasionally taken in the neighboring waters. Turtle are common.

The islands derive their name from Bermudez, a Spaniard, who sighted them in 1527. They were first colonized by Admiral Sir George Somers, who was shipwrecked there in 1609, on his way to Virginia. On his report the Virginia Company claimed them, and obtained a charter for them from James I. in 1612. This company sold their right for £2000 to an association of 120 persons, who obtained a new charter in 1616, incorporating them as the Bermuda Company, and granting them very extensive powers and privileges. Representative government was introduced in 1620. In 1621 the Bermuda Company in London made a Body of Ordinances for the government of the colony. During the civil war great numbers of emigrants from England were attracted thither by the favorable reports of the climate and soil. Toward the end of the reign of Charles II. grave complaints were made by the inhabitants of the misgovernment of the plantation by the company, and its charter was annulled by process of quo warranto, at Westminster, in 1684-85. Since then the governors have been appointed by the Crown, and laws for the colony enacted by a local legislature, consisting of the governor, council, and assembly. The lands belonging to the company were forfeited to the Crown on the annulment of their charter, and, with the exception of some reserved for public uses, were granted in 1759 to purchasers on small quit-rents, extinguishable on the payment of a fixed sum of money.

During the Revolutionary war in North America the inhabitants suffered great privations from the scarcity of food; and although they export largely certain articles of agricultural produce, especially potatoes, onions, tomatoes, and arrowroot, they are still dependent on foreign supplies for all the flour and most of the meat consumed. Early in the present century the importance of the Bermudas as a naval station came to be recognized. Ireland Island was purchased exclusively by the government, and a dockyard established there. By order in council, dated June

28, 1824, the Bermudas were declared a place where male convicts might be kept at hard labor on the public works; but these islands never were made a penal settlement, strictly speaking, where convicts might be discharged. The establishment was broken up in 1863. On the abolition of slavery in 1834, the system of temporary apprenticeship of the emancipated slaves, permitted by the Act of Parliament in the slave-holding colonies, was dispensed with by the local legislature of Bermuda, so as to entitle the slaves to their absolute freedom six years sooner than was required by Parliament. They and their descendants now form more than a numerical half of the entire population.

In 1846 a lighthouse, visible at more than thirty miles' distance, was erected on the highest land in the colony, the light being 362 feet above the sea. A public library was established in 1839. In 1871 the island of St. George's was connected with the main island by a causeway and road two miles in length, commenced in 1866, and completed at a cost of nearly £30,000. An iron-girder swing-bridge still permits the passage of vessels.

The revenue in 1874 was £29,066, the expenditure £29,800, the public debt £13,234, the imports £252,435, the exports £81,585; total tonnage of vessels entered 72,212; cleared, 71,935. The census of 1871 showed a population of 12,121, of whom 4725 were white, 7396 colored.

(The above data have been derived from the special Catalogue of the British section.)

Commission from BERMUDA to the International Exhibition :

HIS HON. THOMAS L. WOOD, Chief Justice, President.

HON. HENRY FOWLER, Receiver-General.

LT. COL. BLAND, R. E.

JAMES TUCKER, ESQ., Colonial Secretary and Honorary Secretary.

CAPT. LOCKHART, R. A., A. D. C.

*Assistant Commissioners.*

A. H. FRAZER LEFROY, ESQ.

W. S. BARR, ESQ.

H. J. HINSON, ESQ., M. D.

J. B. HEYL, ESQ.

C. C. KEANE, ESQ.

*Resident Commissioner*—A. A. OUTERBRIDGE, Philadelphia.

## BRITISH GUIANA.

THIS colony is a portion of the South American Continent, extending from east to west about two hundred miles. It includes the settlements of Demerara, Essequibo, and Berbice. It is bounded on the east by Dutch Guiana, from which it is divided by the river Corentyn, on the south by Brazil, on the west by Venezuela, and on the north and north-east by the Atlantic Ocean.

This territory was first partially settled by the Dutch West India Company in 1580. It was from time to time held by Holland, France, and England. It was restored to the Dutch in 1802, but in the following year retaken by Great Britain, to whom it was finally ceded in 1814. It is impossible to determine the exact area of the

colony, as its precise boundaries are undetermined between Venezuela and Brazil, respectively, but it has been computed to be 76,000 square miles.

Under the Dutch, Demerara and Essequibo constituted one government, and Berbice another, which arrangement indeed continued in force under the British administration down to the year 1831.

The revenue in 1874 was £475,885, the expenditure £485,893, both exclusive of the sums expended on immigration by the planters. The public debt was £426,030, but £400,030 was invested for a sinking fund, or otherwise secured. The exports in 1874 were valued at £1,873,219, the imports at £2,761,837.

The population in 1871 was stated to be 193,491, of whom 113,570 were natives of British Guiana, 13,385 of West India Islands, 7925 of Madeira and the Azores, and 9635 of other places. The estimated population in 1875 was 212,000, including an immigrant population under indenture on estates of 38,597, of whom 33,360 were Indians, 3875 Chinese, and 562 Africans. The aboriginal Indians were estimated in 1851 at about 7000; but Mr. M'Clintock, Superintendent of Rivers and Creeks, an undoubted authority on the subject, carries the number as high as 20,000 or 21,000, but the numbers of the tribes within the British territories vary, and are at all times very uncertain.

(The above data have been derived from the special Catalogue of the British section.)

Commission from BRITISH GUIANA to the International Exhibition.

A. A. OUTERBRIDGE, Commissioner, Philadelphia.

## CEYLON.

AN island situated in the Indian Ocean, off the southern extremity of Hindostan, lying between 5° 55' and 9° 51' N. lat., and 79° 41' and 81° 54' E. long.; its extreme length from north to south—*i. e.*, from Point Palmyra to Dondera Head—is 266 miles; its greatest width 140½ miles, from Colombo on the west coast to Sangemankende on the east.

The climate for a tropical country is comparatively healthy, the heat in the plains, which is nearly the same throughout the year, being much less oppressive than in Hindostan. Along the coast the annual mean temperature is about 80° Fahr.; at Kandy, 1465 feet above the sea level, it is 76° (average of ten years); at Colombo the annual variation is from 76° to 86°; at Galle 70° to 90°; and at Trincomalee 74° to 91°. In the mountain ranges there is of course a great variety of climate, the thermometer at the hill station Nuwara Eliya, which is some 6000 feet above the level of the sea, falling at night as low as 32°.

Ceylon was visited in early days by the Greeks, Romans, and Venetians; in 1505 the Portuguese formed settlements on the west and south of the island; in the next century they were dispossessed by the Dutch. In 1795-6 the British took possession of the Dutch settlements in the island. They were annexed then to the Presidency of Madras, but five years later, in 1801, Ceylon was constituted a separate colony. In 1815 war was declared against the native government of the interior: the Kandyan king was taken prisoner, and the whole island fell under the rule of the British.

By letters patent under the Great Seal, April, 1831, a Council of Government was appointed, and by a supplementary commission to the then governor (March, 1833) the form of government almost as now existing was established.

The public expenditures for 1874 were £1,184,192; receipts, £1,324,328. The total public debt in 1874 was £600,000. In 1874 the total value of imports was £5,691,860, and of exports £4,687,388.

(The above data have been derived from the special Catalogue of the British section.)

## STRAITS SETTLEMENTS.

SINGAPORE is an island about 25 miles long by 14 wide, situated at the southern extremity of the Malayan peninsula, from which it is separated by a narrow strait about  $\frac{3}{4}$  of a mile in width. There are a number of small islands adjacent to it which form part of the settlement. The seat of government is the town of Singapore, at the southern point of the island, in lat.  $1^{\circ} 16' N.$ , and long.  $103^{\circ} 53' E.$

Penang is an island about 20 miles long and 9 broad, containing an area of 107 square miles, situated off the west coast of the Malayan peninsula in  $5^{\circ} N.$  lat., and at the northern extremity or entrance to the Straits of Malacca. On the opposite shore of the mainland, from which the island is separated by a strait from 2 to 10 miles broad, is Province Wellesley, a strip of territory forming part of the settlement, averaging 8 miles in width, and extending 45 miles along the coast, including 10 miles of newly-acquired territory to the south of the Krian. The chief town is George Town, in  $5^{\circ} 24' N.$  lat. and  $100^{\circ} 21' E.$  long.

Malacca is situated on the western coast of the peninsula, between Singapore and Penang, about 120 miles from the former and 240 from the latter, and consists of a strip of territory about 42 miles in length, and from 8 to  $24\frac{1}{2}$  miles in breadth. The principal town, called Malacca, is  $2^{\circ} 10' N.$  lat. and  $102^{\circ} 14' E.$  long.

The revenue during the year 1874 was £309,991, and the public expenditures £317,726.

(The above data have been derived from the special Catalogue of the British section.)

## GOLD COAST COLONY, WEST AFRICA.

THE Gold Coast Colony, which comprises the British settlements on the Gold Coast and at Lagos, was constituted by a charter under the Great Seal, bearing date the 24th day of July, 1874.

The Gold Coast is the name generally given to a portion of Upper Guinea, between  $5^{\circ}$  and  $4^{\circ} 20'$  E. long., stretching along the Gulf of Guinea from the river Assini on the west to the river Volta on the east, between which points are the settlements of Axim, Dixcove, Secondee, Elmina, Cape Coast Castle, Anamaboe, Accra, and Addah. In 1672 a company was formed, called the Royal African Company, which built forts at Dixcove, Secondee, Commendah, Anamaboe, Winnebah, and Accra, besides strengthening Cape Coast Castle, which was already in existence. This company was succeeded in 1750 by the African Company of Merchants, constituted by Act of Parliament, with liberty to trade and to form establishments on the West Coast of Africa between  $20^{\circ}$  N. and  $20^{\circ}$  S. lat. This company was dissolved in 1821 by Act of Parliament, and the forts transferred to the Crown, by whom they were placed under the government of Sierra Leone.

The revenue of the Gold Coast for 1874 was £74,868, the expenditure £47,796. The annual imports were £225,525, the exports, £330,624. It has no public debt. The estimated population, including the protectorate, is 400,000.

The revenue of Lagos for 1874 was £39,350, the expenditure £37,296, the public debt £11,631. The imports for the same year were £348,636, the exports £486,227. The population is 62,021.

(The above data have been derived from the special Catalogue of the British section.)

## MAURITIUS.

AN island lying in the Indian Ocean, between  $57^{\circ} 17'$  and  $57^{\circ} 46'$  E. long., and  $19^{\circ} 58'$  and  $20^{\circ} 32'$  S. lat. It is 400 miles east of Madagascar. It comprises an area of 676 square miles.

The Mauritius was discovered by the Portuguese in 1507. They claimed possession of it during nearly the whole of the sixteenth century. The first who made any settlement in it were the Dutch in 1598, who named it Mauritius, in honor of their prince Maurice. It was abandoned by them in 1710, and afterward taken possession of by the French. Mauritius was for a long time during the war a source of great mischief to English merchant-vessels and Indiamen, from the facility with which sorties might be made from it upon traders by French men-of-war and privateers. The British government determined on an expedition for its capture, which was effected in 1810. The possession of the island was ratified by the treaty of Paris, 1814.

Mauritius pays £45,000 per annum to the imperial government as military contribution, but this amount is subject to reduction when the garrison is below the standard fixed upon as necessary for the defence of the colony. The total police force is 849.

The revenue for 1874 was £720,130, the expenditure £727,063, the public debt £895,600, bearing six per cent. interest. The imports were £2,427,813, the exports £2,697,892. The estimated population at the close of 1874 was 3,331,371, of whom 233,017 were Indians.

(The above data have been derived from the special Catalogue of the British section.)

## QUEENSLAND.

QUEENSLAND occupies the whole of the northeastern portion of Australia, commencing at a point of the east coast about 400 miles north of Sidney, called Point Danger, in latitude  $28^{\circ} 8'$  south. The greater portion of the southern boundary line is formed by the 29th parallel of south latitude. The eastern seaboard extends about 1300 miles to Cape York, the extreme northern point of the continent, in latitude  $10^{\circ} 40'$ . The mean breadth of the territory is 900 miles from the eastern coast-line to the meridian of  $138^{\circ}$  east longitude, which forms the western boundary line. This includes the greater portion of the Gulf of Carpentaria, which has a seaboard of about 900 miles. The whole of Queensland comprises 678,000 square miles,—nearly twelve times the area of England and Wales.

The portion of the colony extending along the eastern coast, is indented with numerous bays, which are the outlets of many navigable rivers, having their sources in the cool gorges and deep recesses of a great mountain range, running north and south, parallel with the sea coast, at a distance of from 50 to 100 miles. The summits of this great dividing range rise from 2000 to 6000 feet above the level of the sea. Numerous spurs are given off from the range, in ridges sloping gradually towards the coast. These ridges are generally composed principally of quartz, and in many places form good natural roads for a considerable distance. The ridges are usually covered with a variety of fine and valuable timber. The iron-bark, bloodwood, box, and other descriptions of wood, very valuable to the farmer for fencing and building, are found here in great abundance.

Unlike almost every other portion of Australia, Queensland is correctly described as "a land of rivers and streams." These rivers find an outlet in the many large and beautiful bays and estuaries on the eastern seaboard. One of these, Moreton Bay, receives the waters of five rivers, which are always navigable. The largest of these, the Brisbane, is navigated by good-sized steamers for 75 miles, and is nearly a quarter of a mile wide at a distance of 15 miles from its mouth. The principal rivers on the eastern seaboard are the Logan, the Brisbane, the Mary, the Caliope, the Boyne, the Fitzroy, the Pioneer and the Burdekin. The longest tidal river in Queensland is the Fitzroy, which drains an area of not less than 50,000,000 of acres, and is navigable as far as Yaruba, 60 miles from its estuary in Keppel Bay. It receives as its principal tributaries, the Dawson, Mackenzie, and Isaacs, large streams flowing for several hundred miles from the northwest, west, and southwestern parts of the interior. The tide at Rockhampton (40 miles from the embouchure of the river) rises 4 feet, and the stream is thus navigable for vessels of considerable burden.

The banks of the rivers are usually well elevated, and in many places consist of very rich alluvium, brought down from the great mountain ranges. This alluvial soil is frequently of very great depth, and is marked everywhere by a magnificent growth of timber, very unlike the ordinary Australian wood.

Beyond the Main, or great dividing range, the country presents features of still greater beauty and fertility. Vast plains—60, 70, or 80 miles across—stretch out their level surface, unbroken by a single tree, but covered with luxuriant grass, and often purpled over with fragrant herbage. These great plains are composed of rich, black soil. They are well watered with a network of streams, which trickle down from the gradual slopes of the mountain range. The soil in this locality is admirably adapted for tillage; and within a certain distance of the mountain range the rains fall with great regularity. The land here is lightly timbered, and is cleared with less labor than on the lower lands, and the soil has proved to be peculiarly adapted for the growth of wheat of the finest quality. The yield per acre in this locality has sometimes been as much as 50, and even 60 bushels, of 63 pounds to the bushel. The

average yield may be estimated at 30 bushels per acre. Indian corn and other cereals as well as all the European fruits grow luxuriantly, and come to the greatest perfection in this highly favored locality, which has been called the Garden of Queensland.

This country, west of the great dividing range, stretches away in a series of fine plateaux for a distance of 400 or 500 miles westward, and, with the interruptions of other mountain ranges crossing the main range at right angles, for upwards of 1000 miles towards the fertile plains bordering the shores of the Gulf of Carpentaria.

The climate of Queensland is said to closely resemble that of Madeira; the mean annual external shade temperature, taken at Brisbane, being very nearly the same as at Funchal in Madeira, though it is a little hotter in the summer and colder in the winter at Brisbane than at Funchal. Moreton Bay, now Brisbane, has for many years been the resort of invalids from all the other British colonies in the southern hemisphere, and has been called the Montpellier of Australia. The summer season is hot,—the thermometer rising sometimes to 90° or even 100° in the shade; but the air is dry, elastic, and healthy, and the sea breezes temper the heat, and make it perfectly endurable, even to the outdoor laborer, in the hottest time of the year. However hot the day, the night is almost invariably cool, even in the most northern parts of the colony.

The growth of cotton and of the sugar-cane has been attempted in recent years, and both industries are reported to be rapidly advancing. At the end of 1873, there were 9663 acres under cotton, and 14,495 acres under sugar-cane, out of a total of 64,218 acres under cultivation.

The live stock at the end of 1873 numbered 99,243 horses, 1,343,093 cattle, 7,268,946 sheep, and 42,884 pigs. It is estimated that there are, at present, about 17,000,000 sheep in the colony.

There are several coal mines in the colony, the produce of which, in 1873, amounted to 33,613 ounces, valued at £22,052. Gold fields were discovered in 1867, the principal of them at Gympie Creek, which had a digging population of 5010 at the end of 1873. The total gold produce amounted to 163,972 ounces, valued at £555,310, in 1873.

The total value of the imports and exports of Queensland, during the year 1875, was: Imports, £3,881,726; exports, £4,544,513. The principal articles of export are gold, wool, tin ore, and raw cotton.

The form of government of Queensland was established December 10th, 1859, on its separation from New South Wales. The power of making laws and imposing taxes is vested in a Parliament of two houses, the Legislative Council and the Legislative Assembly. The former consists of 21 members, nominated by the crown for life. The House of Assembly comprises 42 deputies, returned from as many districts, for five years, by the ballot vote of all taxpayers. The executive is vested in a governor appointed by the crown.

Queensland is divided into 17 municipalities, the largest of which, as regards population, is Brisbane. It contains the city of Brisbane, the capital of the colony and the seat of government, with a population of 19,413, at the end of 1872.

At the end of 1873, there were 218 miles of railway open for traffic.

The post office during that year carried 2,459,434 letters, 1,594,792 newspapers, and 93,540 packets. There were 20,998 money orders, to the value of £85,455.

At the end of 1873, there were in the colony, 3609 miles of telegraph wire, with 73 stations. The number of messages sent in 1873, was 156,608.

An excellent system of primary education, which, since 1870, has been made is in successful and vigorous operation throughout the colony.

#### Commission from QUEENSLAND to the International Exhibition :

ANGUS MACKAY, ESQ.  
P. A. JENNINGS, ESQ.  
W. B. TOOTH, ESQ.  
W. HILL, ESQ.

W. R. GORDON, ESQ.  
C. STRAGER, ESQ.  
T. STOMAN, ESQ.

## SEYCHELLES ARCHIPELAGO.

THE island of Rodrigues, the Seychelles Islands, Diego Garcia, and others, are dependencies of the Mauritius. Rodrigues is situated about 300 miles east of Mauritius. It is 26 miles in length by 12 in breadth. It is cultivated by colonists from Mauritius.

The Seychelles, or Mahe Islands, are situated between the parallels of south latitude  $4^{\circ}$  and  $5^{\circ}$ ; the total number of acres comprised in this group is 50,120; the distance from Mauritius 940 miles. These islands are under the superintendence of a Chief Civil Commissioner (assisted by a Board of Commissioners) at Mahe, who is appointed by the Secretary of State, but is subordinate to the Governor of Mauritius, from whom he takes instructions.

(The above data have been derived from the special Catalogue of the British section.)

## TASMANIA.

TASMANIA, formerly known as Van Diemen's Land, is an island about 100 miles S. E. of Australia, from which it is separated by Bass' Strait. It lies between lat.  $40^{\circ} 45'$  and  $43^{\circ} 35'$  S., and long.  $144^{\circ} 50'$  and  $148^{\circ} 20'$  E. Its greatest length from N. to S. is 186 miles, its medium breadth 165 miles. The total area is 16,778,000 acres, of which 3,982,003 acres are alienated from the Crown by grant and sale; 1,348,400 acres are held under depasturing licenses from the Crown; the total area under cultivation is 326,486 acres. Wheat is cultivated on 57,633 acres; barley on 5129; oats on 32,704. Consequent on the high duties enforced on agricultural produce by the other Australian colonies, and the fluctuating state of the intercolonial markets, the attention of Tasmanian agriculturists has of late years been turned to the production of wheat for the English market, and this has become the most important article of strictly agricultural produce. The export of grain in the year 1874 was valued at £115,788.

Salubrity and comparative coldness of climate, owing to higher latitude, make Tasmania a breeding station of stud stock for all the Australian continent. The number of horses in 1874 was 23,208, cattle 110,450, and sheep 1,714,168.

Most of the wool produced is merino, the export during the year 1874 amounting to 5,050,920 lbs., which represented a value of £350,713.

Mining industry for many years was confined to gold and coal, but of late tin, iron, and slate have attracted attention. The yield of gold in 1874, produced by 185 persons, was—alluvial 850 oz., quartz 3800 oz. 14 dwt. The quantity of quartz crushed was 3452½ tons. The average yield per ton of stone was 1 oz. 5 dwt. 8½ grs. The average value of gold per ounce was £3 19s. 6d. for alluvial; quartz £3 19s. 6d. The total value of the produce of gold for 1874 was £18,491. The mineral which occupies the greatest share of attention is tin, the supply of ore being practically unlimited. The total amount raised in 1874 was 400 tons, valued at £78 a ton. The only locality in which silver ore has been worked in Tasmania is Pen-



guin Creek. Of iron the quantity raised during 1874 was 1400 tons; of this quantity 1000 tons were raised at Lempriere, West Tamar, and 400 tons at Lewisham.

The island is intersected by valuable coal-measures. At present the output of Tasmanian coal is not extensive, and the island is mainly supplied from Newcastle, New South Wales, although, for domestic purposes, Tasmanian coal is used to a considerable extent.

Of late years attention has been directed to the slate deposits of Tasmania; the high prices ruling for English slates in the colonial markets has induced the Australian Slate Company to commence work on a fair scale. In 1874 a quarter of a million of slates were prepared for sale at Piper's River.

At Ilfracombe Bay there is an extensive bed of pure white clay which seems very refractory, and which, when mixed with fine quartz (also abundant and close at hand), forms an admirable fire-brick. Common clays are found in all directions and the iron companies are now manufacturing bricks. Kaolin or porcelain clay is also found at Circular Head.

In the West Tamar district limestone quarries have been worked for many years past. There is an immense mountain of blue limestone situated about two miles from the township of Latrobe, on the River Mersey. At the River Don there are very large deposits of pure carbonate of lime, and the eastern districts, especially Fingal, abound with lime of various kinds and qualities.

The principal timber trees of Tasmania—such as blue gum, stringy bark, white gum or gum-topped stringy bark, swamp gum, and peppermint tree—furnish a hard, close-grained, and strong timber. Other useful woods are the huon pine, blackwood, myrtle, swamp gum, sassafras, celery-topped pine, silver wattle, ironwood, native cherry, whitewood, pinkwood, and native pear.

Bark is largely exported to England and New Zealand for tanning purposes. The price of ground bark varies from £4 to £6 per ton at the ports. During the year 1874 about 4870 tons were exported, valued at £22,123. Hops are also largely cultivated. In 1874, 819,145 pounds weight were exported, valued at £42,284.

The principal animals are the kangaroo, wallaby, opossum, and bandicoot, the skins of which are all available for tanning purposes, the fur being highly valuable as rugs, etc. The devil and Tasmanian tiger are formidable beasts, and used to make great havoc among the flocks. The tiger is a low, long-bodied animal with powerful forequarters and a dog-like head, weighing sometimes from sixty to seventy pounds. The devil, though not so large, is more hideous in appearance than the tiger.

Of birds 171 species have been observed, but of these only 20 species are supposed to be peculiar to Tasmania. The notes of many of the birds are very musical, the most remarkable being the reed warbler, the tones of which approach those of the nightingale, the black and white magpie, and the butcher-bird. The principal edible birds are varieties of quail, duck, snipe, golden plover, and pigeons.

There are many species of freshwater fish, the most valuable being the cucumber grayling. Among the estuary fish, those most appreciated as edible are the sole, whiting, garfish, and rock-cod. The best of the deep-sea fish are the trumpeter and kingfish. During the last ten years the salmon trout and brown trout, the tench and perch, have been established in many of the rivers and lakes. Salmon and salmon trout have also succeeded.

The chief industries are brewing, milling, jam-making, fellmongering, tanning, and coopering. Most of the beer is excellent, and is appreciated in the other colonies. In 1874 ale to the quantity of 22,900 gallons was exported. The quantity of jam exported in the same year was 2,648,012 lbs., and 179,762 bushels of fruit, valued together at £120,027. Tasmanian leather is excellent, all varieties from kip to kangaroo being supplied of such quality that a great falling off in the importation of inferior leather from European ports has taken place; and in 1874, £15,513 worth was exported from Hobart Town.

There is one remarkable feature distinguishing Tasmania from all other countries whose statistics have been compared with hers which ought not to be passed by unnoticed—namely, the small mortality among children, particularly those under one year of age. Taking an average of five years, the following results have been arrived at. Out of 100 infants born there died within the first year in Tasmania 9.45; in N. S. Wales, 9.57; in Queensland, 11.07; in Victoria, 11.86; in S. Australia, 14.24; the number in England being about 16; in Scotland about 12½. The percentage of deaths of children under five years was: Tasmania, 20.08; N. S. Wales, 42.14; Victoria, 45.50; Queensland, 46.33; S. Australia, 54.17. The proportion of children under five who died to 1000 children of the same age living was: In Victoria (ten years) about 52½; in England and Wales (thirty years), about 67½; in Tasmania, less than 27. Thus it appears that the mortality of children under five years of age in Tasmania is little more than half that of the least healthy of the Australian colonies. It is also considerably under that of New Zealand, which, as regards the general death-rate, is the most healthy of all the Australasian group.

In 1870 the population, according to the census then taken, numbered 99,328 souls; the estimated population on the 31st of December, 1874, was 104,176. The revenue for 1874 was £327,925, and the expenditure £318,278. The amount expended for public works, roads, bridges, and railways, inclusive of the expenditure on the Launceston and Western District Railway, amounted during the year 1874 to £45,410. The value of imports during the same period was £1,247,785, while that of exports was £925,325.

(The above data have been in part condensed from the official report of the Victoria Exhibition, 1870.)

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Commission from TASMANIA to the International Exhibition.

H. P. WELCH, ESQ., Commissioner.

P. A. JENNINGS.

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## TRINIDAD.

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TRINIDAD is an island lying to the eastward of Venezuela, between N. latitude 10° 3' and 10° 50', W. longitude 61° and 62° 4' of Greenwich. Its length is 65 miles on the southern and 53 miles on the northern side of the island, and its breadth, on the eastern and western sides respectively, 48 and 49 miles. It is separated from the continent of America by the Gulf of Paria, into which fall the northern mouths of the Orinoco. The area of the island is 1754½ square miles. Port of Spain, the chief town and port of entry, according to the census of 1871, contains 23,561 inhabitants. The second town and port of entry is San Fernando, 26 miles south from Port of Spain, with a population of 5006 inhabitants. There are also the minor island towns of St. John, St. Joseph, Aronca, and Arima. The harbor is the finest in the West Indies.

The revenue for 1874 was £276,529, the expenditure £294,006. The public debt is £100,000 for railways and £47,500 secured on general revenue, but recoverable by the colony from other parties. The imports in 1874 were £1,342,992, the exports, £1,412,260. The census of 1871 showed a population of 109,638.

(The above data are derived from the "Colonial Office List," 1876.)

# INDIA.

**BRITISH INDIA** is the name given to those parts of Hither and Further India placed under the administration of the viceroy, or governor-general of India. It does not include Ceylon, which, although a British possession, has its government entirely separate from that of Hindustan; but it extends along the eastern coast of the Bay of Bengal to 10° south latitude, and thus includes part of Further India, or Indo-China.

The following table, from the statistical abstract, relating to British India, for 1873 shows the area and population of the provinces under British administration :

TERRITORIES AND PROVINCES UNDER THE ADMINISTRATION OF	AREA IN ENGLISH SQ. MILES.	POPULATION.	AVERAGE POT. PER SQ. MILE.
Governor-general of India:			
Ajmere, . . . . .	2,672	426,268	159
Coorg, . . . . .	2,000	168,312	84
Berar, . . . . .	16,960	2,231,565	132
Mysore, . . . . .	27,077	5,055,412	187
Governor of Madras, . . . . .	141,746	31,311,142	220
" " Bombay, . . . . .	127,532	14,042,596	110
Lieutenant-governor of Bengal, . .	248,231	66,856,859	269
" " Northwest Provinces, . . . .	80,901	30,769,056	380
" " Punjab, . . . . .	102,001	17,596,752	173
Chief Commissioner of Oude, . . .	23,973	11,220,747	465
" " Central Provinces, . . . . .	84,162	9,066,038	108
" " British Burmah, . . . . .	93,664	2,562,323	27
	950,919	191,307,070	201

Cotton is the most important product of Hindustan. Wool will probably soon become a great Indian staple. The chief supply is from the Himalaya and Afghan regions. Hemp and flax, silk from the high lands, coffee, linseed, tobacco, and indigo, are all valuable productions of British India. The leaves and silver blossoms of the tea plant are beginning to cover the Himalaya slopes, and the hilly districts of Bengal, the Northwest Provinces, and the Punjab. Great quantities of rice are raised in Southern India and British Burmah. The Malabar district, Martaban, and Tenasserim furnish thousands of logs of the best teak timber. The cinchona or quinine plant has lately been introduced on the Neilgherries with great success, the original plants having been brought over from Peru.

The total value of the imports of British India, during the year 1874, was as follows:

	IMPORTS.	EXPORTS.
Merchandise, . . . . .	£32,593,609	£54,960,778
Treasure, . . . . .	5,792,533	1,914,071
Total, . . . . .	£38,386,142	£56,874,849

The imports and exports, including treasure, were divided as follows:

	IMPORTS.	EXPORTS.
Bengal, . . . . .	£17,169,310	£23,201,820
British Burmah, . . . . .	1,852,459	3,480,407
Madras, . . . . .	3,861,057	7,258,147
Bombay, . . . . .	15,054,121	21,694,571

\* The most important articles of exports from India to the United Kingdom, during 1874, were:

		VALUE.
Cotton, . . . . .	3,668,928 cwts.	£10,325,630
Jute, . . . . .	4,260,170 "	3,545,124
Rice, . . . . .	6,387,966 "	3,236,232
Indigo, . . . . .	62,203 "	1,661,745
Tea, . . . . .	17,608,538 lbs.	1,566,128
Hides, . . . . .	321,299 cwts.	1,351,696

Next to the United Kingdom, the countries having the largest trade with India are China and Japan, the imports from which average £8,500,000 per annum, while the exports to them are of the average value of £12,000,000. Exports of the average value of £5,000,000 are also sent to Egypt, in transit for the United Kingdom.

The following figures show the number and tonnage of vessels, including native craft, which entered and cleared during 1874:

	VESSELS.	TONS.
Entered, . . . . .	20,435	4,424,454
Cleared, . . . . .	19,629	4,588,428

The executive authority in India is vested in a Governor-general, or Viceroy, appointed by the crown, and acting under the orders of the Secretary of State for India. The Governor-general, in council, has power to make laws for all persons, whether British or native, foreigners or others, within the Indian territories under the dominion of Her Majesty, and for all subjects of the crown, within the dominions of Indian princes and states in alliance with Her Majesty.

The duties of the Council of State are, under the direction of the Secretary of State, to conduct the business transacted in the United Kingdom in relation to the government of and the correspondence with India. The government in India is exercised by the Council of the Governor-general, consisting of five ordinary members, and one extraordinary member, the latter the commander-in-chief.

The total revenue and expenditure, during the year ending March, 1874, were:

	REVENUE.	EXPENDITURE.
In India, . . . . .	£49,360,142	£44,637,637
In Great Britain, . . . . .	238,111	10,321,591
Total, . . . . .	£49,598,253	£54,959,228

In the army estimates for the British forces in India, in the year 1875-76, the strength was stated as follows:

Royal horse artillery, . . . . .	2,497
Cavalry of the line, . . . . .	4,330
Royal artillery and engineers, . . . . .	10,171
Infantry of the line, . . . . .	45,852
Total, . . . . .	62,850

Returns of the year 1874 state that the combined armies of the native chiefs of India number 315,000 men, with an artillery of 5300 large guns.

On December 31, 1874, there were 6273 miles of railway, built at an expense of £97,000,000, open for traffic. A further extent of 2518 miles was in course of construction at the commencement of 1875.

In the fiscal year ending March 31, 1874, the number of letters which passed through the post office of British India was 98,531,628, of newspapers, 8,762,200, of parcels, 605,312, and of books and patterns, 1,336,363, being a total of 109,235,303. The mail traveled over 54,617 miles, of which total 41,857 miles were done by boats

and runners, 4003 miles by carts and on horseback, and 5739 miles by railways. Number of post offices and letter boxes, 6805.

There were at the same time 16,436 miles of telegraph lines, 32,148 miles of wires, and 225 telegraph offices. The total number of messages during the year was 788,048.

Efforts for spreading education among the population of India have been made since 1848, in which year the Lieutenant-governor of Agra brought forward a scheme for giving a schoolmaster to every village of at least a hundred families. After three years' discussion, the Court of Directors of the East India Company accepted the groundwork of the plan, and orders were issued directing that a good vernacular school should be established for every circle of villages, called Hulkabundee, and that the teacher should be paid from a cess of 2 per cent. on the land revenue.

In the year 1871 the number of educational institutions belonging to, aided, or maintained by the government in British India, was 25,147; average attendance of pupils, 799,622; amount expended by government, £749,724; total expenditure from all sources, £1,019,418.

In the northwestern provinces and Madras the foundation has been laid of a national system of education; while the general position for India is that the government has succeeded in establishing a system of public instruction for the upper and middle classes, but has as yet made little or no impression on the middle classes.

# CANADA.

THE Dominion of Canada consists of the provinces of Ontario, Quebec—formerly Upper and Lower Canada—Nova Scotia, New Brunswick, Manitoba, British Columbia, and Prince Edward's Island. The two principal provinces, Quebec and Ontario, are almost entirely embraced within the basin of the river St. Lawrence, but occupy only those portions north of the great lakes, and of the river as far as the town of Cornwall ( $45^{\circ}$  north latitude and  $74^{\circ} 45'$  west longitude), whence eastward they occupy both banks, and are bounded on the south by the United States. The most westerly limit is the heads of the Pigeon and Arrow rivers, which debouch in Lake Superior. The eastern or maritime provinces embrace no portion of the basin of the great river.

The following table shows the area and population of the various provinces:

	AREA, ENG. SQ. MILES.	POPULATION (1871).
Ontario, . . . . .	121,260	1,620,851
Quebec, . . . . .	210,020	1,191,516
Nova Scotia, . . . . .	18,660	387,800
New Brunswick, . . . . .	27,105	285,594
Manitoba, . . . . .	2,891,734	11,953
British Columbia, . . . . .	213,000	10,586
Prince Edward's Island, . . . . .	2,173	94,021
Total, . . . . .	3,483,952	3,602,321

The principal river of Canada is the St. Lawrence. Its most important tributaries are all from the left. The St. Lawrence drains an area of 565,000 miles. The Ottawa, 450 miles long, forms the boundary between Ontario and Quebec. The St. Maurice is nearly 400 miles in length, and the Saguenay, noted for its fine scenery, is 225 miles long. The only affluents from the right worth naming are the Richelieu, the St. Francis, and the Chaudiere.

A great part of Canada, more especially the shores of Lake Superior, is valuable only for mineral resources, such as iron, zinc, lead, copper, silver, gold, cobalt, manganese, gypsum, marl, granite, sandstone, limestone, slate, and marbles of nearly every imaginable color. Considerable portions, also, though heavily timbered chiefly with pine, are yet but little adapted to settlement and cultivation. Towards the Gulf of the St. Lawrence, again, a considerable section derives importance mainly from the fisheries, being, with partial exceptions in Gaspé, comparatively worthless for every other object. Thus the area for the profitable production of ordinary cereals cannot materially exceed 40,000 square miles, containing, however within this space a singularly small portion of irreclaimable surface. This cultivable block increases regularly in width and fertility, from its commencement on the lower St. Lawrence to the shores of Lake Huron. Below Quebec—to say nothing of the precarious nature of the crops—there may always be seen, on one or on both sides, the primeval forest. Between that city, again, and the basin of the Ottawa, a gradual improvement shows itself, even on the north side; and towards the south there stretches away to the frontier of the United States a broad belt of generally undulating character, probably the best field in the country for the blending of pasturage and agriculture. From the basin of the Ottawa inclusive, the parallel of the south end of Lake Nipissing may be said to cut off, towards the southwest, the entire residue of the practicable soil, in the shape of a roughly defined triangle which, as a whole, is at least equal, in the growth of grain in general and of wheat in particular, to any region of the same extent in North America.

The climate of Canada is subject to great extremes of heat and cold, the thermometer ranging between  $102^{\circ}$  above and  $36^{\circ}$  below the zero of Fahrenheit.

As Canada slants southwards eight or nine degrees from the mouth of the St. Lawrence to that of the Detroit, which communicates between Lakes St. Clair and Erie

the climate of the west must be warmer than that of the east. Besides, the lakes of Upper Canada appear, in a good measure, to neutralize and mitigate the extremes of a Canadian climate. While Quebec in winter ordinarily enjoys five or six months of sleighing, the corresponding season in Toronto ranges from five or six days to five or six weeks. As to summers, the difference in favor of Toronto is rather in point of duration than of intensity. As indications of the climate of Canada, it may be stated that the isle of Orleans, immediately below Quebec, is famous for its plums, and the island of Montreal for its apples; and from the neighborhood of Toronto to the head of Lake Erie, grapes and peaches ripen without any aid whatever. Melons, again, of large size, come to maturity, through the settled parts of the province, in the open air; and pumpkins and squashes attain enormous size, some of them near Toronto having weighed 300 pounds.

The following statistics of the mining, agricultural, and manufacturing industries are taken from the Official Report of the Canadian Census of 1871. They refer only to the provinces of Ontario, Quebec, New Brunswick, and Nova Scotia.

#### RAW MINERAL PRODUCTS.

Coal, . . . . .	671,008 tons.	Gold, . . . . .	22,941 oz.
Iron ore, . . . . .	129,363 "	Silver, . . . . .	69,197 "
Copper ore, . . . . .	13,310 "	Phosphate of lime, . .	1,980 tons.
Pyrites, . . . . .	2,800 "	Mica, . . . . .	4,010 lbs.
Manganese, . . . . .	635 "	Crude petroleum, . .	12,669,435 galls.
Other ores, . . . . .	14,063 "	Grained marble, . . .	8,870 cub. ft.
Peat, . . . . .	14,772 "	Building stone for dress-	
Plumbago, . . . . .	270 "	ing, . . . . .	5,206,796 "
Lump gypsum, . . . . .	114,433 "	Roofing slate, . . . .	6,013 sqs.

The statistics of agriculture are as follows:

Spring wheat, . . . . .	10,355,912 bushels.	Beans, . . . . .	220,644 bushels.
Winter wheat, . . . . .	6,367,961 "	Buckwheat, . . . . .	3,726,484 "
Barley, . . . . .	11,496,068 "	Corn, . . . . .	3,802,830 "
Oats, . . . . .	42,489,463 "	Potatoes, . . . . .	47,330,187 "
Rye, . . . . .	1,064,354 "	Turnips, . . . . .	24,339,476 "
Peas, . . . . .	9,905,720 "	Grass and clover	
Hay, . . . . .	3,818,641 tons.	seed, . . . . .	348,605 "

The principal items of furs are 488,182 muskrats, 49,799 minks, 48,151 beavers, 19,271 moose, cariboo and deer, 17,582 martens, 37,402 seals, 12,861 foxes, 6132 otters, and 2553 bears.

The following are the statistics of manufactures:

Capital invested, . . . . .	\$77,964,020
Number of hands employed, . . . . .	187,942
Amount of yearly wages, . . . . .	40,851,009
Value of raw material, . . . . .	124,907,846
Total value of products, . . . . .	221,617,773

The statistics of the fisheries are as follows: Vessels, 991, men, 6984; boats, 16,876, men, 25,876; shoremen, 4647; fathoms of nets, 1,879,435.

The leading items of the product of the fisheries were 682,631 quintals of cod, 120,213 quintals of haddock, 417,300 barrels of herring, 77,925 barrels of mackerel, 2491 gallons of cod-liver oil, and 676,403 gallons of other fish oils.

The foreign trade, during 1874, was, including bullion and specie, as follows: Imports, \$128,213,582; exports, \$89,851,928. The trade of the Dominion of Canada is chiefly with the United States and Great Britain.

The "British North American Act, 1867," orders that the constitution of the Dominion shall be "similar in principle to that of the United Kingdom;" that the executive authority shall be vested in the sovereign of Great Britain and Ireland, and carried on in her name by a Governor-general and Privy Council; and that the legislative power shall be exercised by a Parliament of two Houses, called the Senate and the House of Commons. Provision is made in the act for the admission of Newfoundland, still an independent province of British North America, into the Dominion of Canada. The seven provinces forming the Dominion have each a separate parliament and administration, with a Lieutenant-governor at the head of

the executive. They have full power to regulate their own local affairs, dispose of their revenues, and enact such laws as they may deem best for their own internal welfare, provided only they do not interfere with, and are not adverse to, the action and policy of the central administration under the Governor-general.

The public debt of the Dominion, incurred chiefly on account of public works, and the interest on which forms the largest branch of the expenditure, was \$116,082,917 on the 1st of July, 1875. The total revenue during the year ending June 30th, 1874, was \$39,930,791; the total expenditure during the same period, \$36,524,876.

The strength of the troops maintained by the imperial government, and forming the garrison of Halifax, was reduced, in 1871, to 2000 men. Besides these, Canada has a large volunteer force, and a newly organized militia. By the terms of the act passed in March, 1868, "to provide for the defence of the Dominion," the militia consists of all British subjects between the ages of 18 and 60, who are called out to serve in four classes, namely: 1st class, 18 to 30, unmarried; 2d, from 30 to 45 unmarried; 3d, 18 to 45, married; 4th, 45 to 60. A general order from the Militia Department, issued in 1874, reduced the active militia force, for the purposes of drill and pay, for the years 1874 and 1875, to 30,000 officers and men. Two schools of military instruction for infantry are established in each of the provinces of Ontario and Quebec, and one in each of the provinces of New Brunswick and Nova Scotia.

The naval forces of Canada consisted, in 1875, of 8 screw steamers, carrying 18 guns. Besides these, the government owned two fast steamers, employed on coast service, not fitted with guns, but available as gunboats.

The total shipping registered on the 31st of December, 1874, was 6930 vessels of a burthen of 1,158,363 tons. Included in this were 634 steamers, of 76,487 tons.

At the end of October, 1874, Canada had a network of railways of a total length of 4022 miles. There were, at the same period, lines of a total length of 1180 miles in course of construction, and 3000 miles more had been surveyed and concessions granted by the government.

On June 30th, 1875, there were in the Dominion, 3943 post offices. The number of letters and post-cards sent through the mails, during the year, was 34,750,000; of newspapers, 25,480,000.

The provinces of Quebec and Ontario have separate school laws, adapted to the religious element prevailing in either. Each township in Ontario is divided into several school sections, according to the requirements of inhabitants. The common schools are supported partly by the government and partly by local self-imposed taxation, and occasionally by the payment of a small fee for each scholar. All teachers must pass an examination before a county board of educators, or receive a license from the provincial normal school, empowering them to teach, before they can claim the government allowance.

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# FRANCE.

FRANCE is the most westerly state of Central Europe, extending from  $42^{\circ} 20'$  to  $51^{\circ} 5'$  north latitude, and from  $7^{\circ} 45'$  east to  $4^{\circ} 45'$  west longitude. It is bounded on the north by the Channel and the Straits of Dover, which separate it from England, by Belgium, the grand duchy of Luxembourg; on the east by Germany, Switzerland, and Italy, on the south by the Mediterranean and Spain, from which it is separated by the Pyrenees, and on the west by the Atlantic Ocean (the Bay of Biscay). The greatest length of France, from Dunkirk, in the north, to the Col de Falguere, in the south, is about 620 miles; its greatest breadth from east to west, from the boundary line in the Vosges to Cape St. Matthieu, in Finisterre, is about 550 miles. The superficial area of France, including the two Savoy provinces and Corsica, is reckoned at about 201,600 square miles. The possessions of France, which are situated in the non-European parts of the world, have a total superficial area of 463,827 square miles, and the largest is Algeria, with an area of 258,310 square miles. France is divided into 86 departments. The total population, exclusive of Algeria and the colonies, was given (in 1872) at 36,102,921.

The colonies and foreign possessions of France in Africa are Algeria, Senegambia, the islands of Bourbon (Reunion), St. Marie, Mayotte, and Nossi-be, in the Indian Ocean, and Gaboon, on the coast of Guinea. The total possessions in Africa cover an area of about 270,000 square miles, with a population of 2,840,000 souls. In America are the islands of Martinique and Guadeloupe in the West Indies, French Guiana, or Cayenne, with St. Pierre and Miquelon, near Newfoundland; forming together an area of 45,000 square miles, with a population of 345,000. In Asia, the Indian settlements of Pondicherry, Mahe, Karikal, Yanaon, and Chaudernagore, comprise 19,600 square miles, with a population of 265,000. A settlement has also been made in Cochin China, embracing 21,700 square miles and 1,336,000 inhabitants, and a protectorate declared over the Empire of Anam. In the Pacific Ocean are two groups, the Marquesas and Tahiti, and New Caledonia, with the Loyalty Isles, the whole forming an area of 11,182 square miles, with 87,000 inhabitants.

The following table gives the population, in 1872, of some of the largest cities in France:

Paris, . . . . .	1,850,000
Lyons, . . . . .	323,000
Marseilles, . . . . .	313,000
Bordeaux, . . . . .	194,000
Lille, . . . . .	158,000
Toulouse, . . . . .	125,000
Nantes, . . . . .	119,000
St. Etienne, . . . . .	111,000
Rouen, . . . . .	102,000

There are four great mountain chains belonging to France—the Pyrenees which separate the French territory from Spain; the Cevenne-Vosgian range, running north and south between the Moselle and the new boundary line; the Alps, which separate the Swiss territory from the provinces of Savoy and Nice; and the Sardo-Corsican range which belongs, as the name implies, to the islands of Sardinia and Corsica. The highest peaks in the Pyrenees are the Maladetta and Mont Perdu (10,825 feet and 10,934 feet); in the Cevenno-Vosgian range, the greatest height

(the Widderkalm) does not greatly exceed 7000 feet. The French portion of the Alps now includes several of the highest mountains and most elevated passes of the ranges, as Mont Blanc, 15,744 feet; Mont Iseran, 13,272 feet; Mont Cenis, 11,457 feet; and the pass of Little St. Bernard, 7190 feet, etc. In Corsica, the highest peak rises to an elevation of 9000 feet. The grand water-shed of France is the Cevenno-Vosges chain, which determines the direction of the four great rivers, the Seine, the Loire, the Garonne, and the Rhone; the first three of which flow north-west into the Bay of Biscay and the English Channel, and the fourth into the Gulf of Lyons.

The entire extent of river navigation in France amounts to 5500 miles, or 8,900,000 metres, while the 99 larger canals, which have been constructed either to connect the various river courses or to supply entirely new channels of water communication, extend over a length of 2900 miles, or 4,700,000 metres. The most important of these works are the canals connecting Nantes and Brest, and the Rhone with the Rhine, and those of Berry, Nivernais, and Bourgogne.

France is peculiarly rich in mineral springs, of which there are said to be nearly 1000 in use. Of these, more than 400 are situated in the group of the Pyrenes, where there are 93 establishments for their systematic use. It is estimated that there are, moreover, fully 4000 springs not hitherto employed.

According to M. Maurice Block's estimate, the physical and agricultural character of the soil of France may be comprised under the following heads:

	HECTARES.*
Mountainous districts, heaths, and commons, . . . . .	9,944,839
Rich land, . . . . .	7,276,399
Chalk, or lime districts, . . . . .	9,788,197
Gravel, stony and sandy, . . . . .	15,951,618
Clay, marshy, miscellaneous, . . . . .	9,807,577
	<hr/> 52,768,600

The same writer further subdivides the soil of France, according to its actual employment, under the following heads:

	PER CENT. OF THE WHOLE AREA
Arable lands, . . . . .	48.3
Meadow lands, . . . . .	9.7
Vineyards, . . . . .	3.7
Cultivated lands, . . . . .	17.8
Roads, streets, public walks, etc., . . . . .	3.7
Forest and unproductive lands, . . . . .	16.8

France possesses one of the finest climates in Europe, although, owing to its great extent of area, very considerable diversities of temperature are to be met with. The mean annual temperature of different parts of France has been estimated as follows, by Humboldt: Toulon, 62° F.; Marseilles, 59.5°; Bordeaux, 56°; Nantes, 55.7°; Paris, 51.2°; Dunkirk, 50.5°.

The following are the statistics of agricultural productions for the year 1869:

	HECTOLITRES.†
Wheat, . . . . .	108,000,000
Rye, . . . . .	24,000,000
Barley and oats, . . . . .	90,000,000
Maize, . . . . .	10,000,000
Potatoes, . . . . .	100,000,000

The production of beet-root sugar in 1872-73 amounted to 418,000 tons. The average yearly produce of the vineyards of France is estimated at about 50,000,000

\* The hectare is equal to about 2.47 English acres.

† The hectolitre equals 2.75 bushels.

of hectolitres (about 1,000,000,000 of gallons). Of this about one-seventh is made into brandy.

The principal forest trees are the chestnut and beech on the central mountains, the oak and cork tree in the Pyrenees, and the fir in the Landes. The destruction of the national forests has been enormous within the last two centuries, but measures have been taken in recent years to plant wood, in order to protect those mountain slopes which are exposed to inundations from mountain torrents, and to provide a supply for the ever-increasing demand for fuel. About one-seventh of the entire territory of France is still covered with wood. Turf taken from the marshy lands is extensively used, more especially in the rural districts, for fuel.

According to the census of 1866—the most recent in regard to animals—there were in France 3,312,637 horses, 518,000 asses, 350,000 mules, 12,733,000 horned cattle, 30,386,000 sheep, 5,500,000 swine, and 1,680,000 goats. There were, according to the *Statistique Agricole* for 1858, about 3,000,000 of beehives, valued at rather more than 24,000,000 of francs; the mean annual returns are, for honey, 6,670,000, and for wax, 1,620,000 kilogrammes.\* Poultry constitutes an important item of farm produce in France, estimated at 45,500,000 of francs, while the eggs and feathers yield 35,250,000 of francs.

The following figures show the condition of the merchant navy of France on the 31st of December, 1873:

		TONNAGE.	MEAN.
Sailing vessels, . . . . .	15,043	882,866	88,541
Steam vessels, . . . . .	516	185,165	10,448
	15,559	1,068,031	98,989

The *cabotage*, or internal coasting traffic, is a great source of financial wealth to the State, to which all rivers and canals belong. In 1873, it employed 2776 vessels, with a tonnage of 122,850 and an equipment of 10,871.

The chief mineral products of France are coal and iron, in the excavation of which nearly 250,000 men were employed in 1868. The production of coal in 1868 was 132,000,000 of quintals, the quintal being equal to 1.97 hundredweight. During the same year, there were 150 iron mines in operation, yielding 34,500,000 of quintals, more than half of this quantity being obtained from the five departments of Haute-Marne, Haute-Saone, Cher, Moselle, and Nord. Argentiferous galena, a little silver and gold, copper, lead, manganese, antimony, and tin occur, but hitherto their working has not proved very productive. The department of Charente-Inferieure yields the largest amount of salt, the mean annual produce being 1,500,000 of quintals (2,500,000 of francs), which is fully one-third of the entire annual produce of the whole country. France derives about 41,000,000 of francs from its quarries of granite and freestone, its kaolin, marbles, sands, lithographic stones, millstones, etc. Granite and syenite are found in the Alps, Vosges, Corsica, Normandy, and Burgundy; porphyry in the Vosges; and basalt and lava, for pavements, in the mountains of Auvergne. Marble is met with in more than 40 departments; alabaster occurs in the Pyrenees; the largest State quarries are near Cherbourg and St. Lo.

The following list gives an approximate estimate of the value of the chief products of French industry:

	MILLIONS OF FRANCS.
Linen fabrics, . . . . .	250
Cotton fabrics, . . . . .	650
Woolen fabrics, . . . . .	950
Silk fabrics, . . . . .	1000
Mixed fabrics, . . . . .	330
Jewelry, watchmaking, . . . . .	35
Gilt wares, . . . . .	12

\* The kilogramme equals 2.2 pounds avoirdupois.

Minerals, mines, salt, etc., . . . . .	600
Articles of food, as sugar, wines, etc., . . . . .	364
Skins, leather, oils, tobacco, . . . . .	556
Bone, ivory, isinglass, etc., . . . . .	30
Chemical products, . . . . .	80
Ceramic arts, . . . . .	86
Paper, printing, . . . . .	60
Forests, fisheries, . . . . .	98

The total imports, for 1873, were 4,576,000,000, and the total exports, for the same year, 4,822,000,000 of francs.

France was proclaimed a republic on the 4th of September, 1870. According to the law of February 25th, 1875, the legislative power is vested in the two Houses, the Chamber of Deputies and the Senate. The Chamber of Deputies is elected by universal suffrage. The Senate is composed of 300 members, 225 of whom are elected by the departments and the colonies, and 75 by the National Assembly. The President of the republic is elected by a majority of the votes of the Senate and Chamber of Deputies, united as the National Assembly. His term of office is for seven years, and he is eligible for re-election.

According to the budget for 1876, the estimated receipts for the year are put down at 2,575,028,582 francs, and the expenditures at 2,570,505,513. The public debt is 23,403,000,000 francs.

The nominal strength of the army, on a peace footing, is given in the latest government returns as 490,332 men; on a war footing, 1,750,000.

The navy of France was composed, at the end of 1873, of 62 ironclads, 264 unarmored screw steamers, 62 paddle steamers, and 113 sailing vessels.

According to the official report for December, 1874, the railways in operation measure 20,711 kilometres, or about 12,866 miles. With the exception of less than 500 miles, the railways of France are held by six companies, which are under the superintendence of the State.

The number of letters forwarded by the post office, in 1874, was 341,068,000; newspapers, postal cards, and parcels, 331,786,000.

At the end of 1873, there were 45,942 kilometres of lines of telegraphs, comprising 123,669 kilometres of wire. The number of messages sent, in 1873, was 6,225,000, of which nearly one-fourth were international messages. There were annual deficits since the establishment of the public telegraph department, in March, 1851. There were 2206 telegraph offices at the end of 1873.

Public instruction is presided over in France by a special ministry. Nearly half the expenses connected with it are defrayed by the State, and the remainder by the departments. There are 15 academies, located in the following towns: Aix, Besancon, Bordeaux, Caen, Clermont, Dijon, Douai, Grenoble, Lyon, Montpellier, Nancy, Paris, Poitiers, Rennes, Toulon. These academies are divided into the five faculties of theology, law, medicine, sciences, and literature, and supplemented by various superior and preparatory schools. The professors are paid partly by the State and partly by fees. Secondary instruction has received an immense impetus during the present century. The different departments share very unequally in the diffusion of education, and it may be generally observed that the proportion of the educated is highest in the northern and eastern districts of France. France supports numerous colleges and schools for instruction in special branches of knowledge. There are also numerous agricultural, forest, farming, and veterinary schools, besides the Ecole Polytechnique, specially designed to prepare youths for the public services; and military and naval colleges at St. Cyr, Saumur, Paris, Vincennes, Brest, Toulon, and St. Denis.

Paris possesses several libraries belonging to, and supported by, the State, but freely opened to the public. There are 338 public libraries in the provinces, to all of which access is afforded in the most liberal spirit. France is rich in public galleries of painting, statuary, and articles of *virtu*. The expenses of secondary and

primary education, literary and scientific institutions, etc., are charged in the budget for 1876 at 44,912,545 francs.

(Detailed information as to the colonial dependencies of France will be found under the appropriate headings in other portions of the catalogue.)

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Commission from FRANCE to the International Exhibition :

**M. M. OZENNE**, Counsellor of State, Secretary-General of the Ministry of Agriculture and Commerce, Commissioner-General of International Exhibitions.

**DU SOMMERARD**, Director of the Museums of Thermes and Cluny, Commissioner-General of International Exhibitions.

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The Secretary-General of the Ministry of Agriculture and Commerce.

The Director-General of Customs.

The Director of the Academy of Fine Arts.

The Director of Consulates and Commercial Affairs, at the Ministry of Foreign Affairs.

**M. OUTREY**, Minister Plenipotentiary.

**M. DU SUMMERARD**, Director of the Museum of Thermes and Cluny.

The Assistant Director of Foreign Commerce.

The President of the Paris Chamber of Commerce.

**M. GUILLAUME**, Member of the Institute.

**MARQUIS DE ROCHAMBEAU**.

**BARON ALPHONSE DE ROTHSCHILD**.

**M. SIEBER**.

**M. ALFRED MAME**.

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**CAPT. ANFRYE**, Military Attache, French Legation.

**MR. BAZERGNE**, Attaché.

**MR. A. IMBERT GOUZHEYRE**, Secretary.

# GERMANY.

THE German Empire occupies the central portion of Europe, and extends from 6° to 22° 40' east longitude and 49° 7' to 55° 50' north latitude. It is bounded on the north by the German Ocean, the Danish Peninsula, and the Baltic; on the east by Russia and Austria; on the south by Russia, Austria, and Switzerland, and on the west by France, Belgium, and the Netherlands. The population (1871) is about 41,000,000. Its area is estimated at 208,000 square miles, or about one-sixteenth of that of all Europe. The coast line measures about 950 miles.

Germany is composed of an aggregation of 26 different States. The following list gives the names of these States, their population, area, and the number of members representing each in the Bundesrath, or Federal Council, and the Reichstag, or Imperial Diet:

STATES.	POPULATION IN 1871.	AREA IN SQUARE MILES.	NO. OF MEMBERS IN BUNDESRATH.	NO. OF DEPUTIES IN REICHSTAG.
<b>Kingdoms:</b>				
1. Prussia, . . . . .	24,691,307	139,751	17	236
2. Bavaria, . . . . .	4,863,450	29,280	6	48
3. Saxony, . . . . .	2,556,244	5,780	4	23
4. Wurtemberg, . . . . .	1,818,539	7,532	4	17
<b>Grand Duchies:</b>				
5. Baden, . . . . .	1,461,562	5,850	3	14
6. Hesse, . . . . .	852,894	2,962	3	9
7. Mecklenburg-Schwerin, . . . . .	557,897	5,136	2	6
8. Saxe-Weimar, . . . . .	286,183	1,403	1	3
9. Mecklenburg-Strelitz, . . . . .	96,982	1,130	1	1
10. Oldenburg, . . . . .	314,777	2,470	1	3
<b>Duchies:</b>				
11. Brunswick, . . . . .	311,764	1,425	2	3
12. Saxe-Meiningen, . . . . .	187,884	955	1	2
13. Saxe-Altenburg, . . . . .	142,122	510	1	1
14. Saxe-Coburg-Gotha, . . . . .	174,339	760	1	2
15. Anhalt, . . . . .	203,437	896	1	2
<b>Principalities:</b>				
16. Schwarzburg-Rudolstadt, . . . . .	75,523	367	1	1
17. Schwarzburg-Sondershausen, . . . . .	67,191	332	1	1
18. Waldeck, . . . . .	56,224	438	1	1
19. Reuss (altere Linie), . . . . .	45,094	123	1	1
20. Reuss (jungere Linie), . . . . .	89,032	320	1	1
21. Schaumburg-Lippe, . . . . .	32,059	170	1	1
22. Lippe-Deimold, . . . . .	111,135	438	1	1
<b>Free Towns:</b>				
23. Lubeck, . . . . .	52,158	110	1	1
24. Bremen, . . . . .	122,402	97	1	1
25. Hamburg, . . . . .	338,974	158	1	3
26. Alsace-Lorraine, . . . . .	1,549,459	5,590		
	41,058,632	208,613	58	382

The *Almanac de Gotha*, for 1876, divides the population of the German Empire, in regard to nationality, as follows: Germans, 37,820,000; Poles, 2,450,000; Wends, 140,000; Czechs, 50,000; Lithuanians and Courlanders, 150,000; Danes, 150,000; French and Walloons, 210,000. The Germans admit of being divided into high and low Germans; the phraseology of the former is the cultivated language of all the German States; that of the latter, known as *Platt-Deutsch*, is spoken in the north and northwest. The Poles are found exclusively in the east and northeast of Prussia; the Czechs in Silesia, about Appeln and Breslau; the Wends, in Silesia, Brandenburg, and Prussian Lusatia; the Lithuanians and Courlanders in east Prussia; the Danes, in Schleswig; the Walloons, about Aix-la-Chapelle, in Rhenish Prussia, and the French, partly in the same region, and in Alsace and Lorraine.

Germany presents two very distinct physical formations. First, a range of high table land, occupying the centre and southern parts of the country, interspersed with numerous ranges and groups of mountains, the most important of which are the Harz and Teutoburger in the north, the Taunus and Thuringerwald in the middle, and the Schwarzwald and Raube Alps in the south, and containing an area, including Alsace and Lorraine, of 110,000 square miles. Second, a vast sandy plain, which extends from the centre of the empire north to the German Ocean, and including Schleswig-Holstein, contains an area of about 98,000 square miles. This great plain, stretching from the Russian frontier on the east to the Netherlands on the west, is varied by two terrace-like elevations. The one stretches from the Vistula into Mecklenburg, at no great distance from the coast of the Baltic, and has a mean elevation of 500 to 600 feet, rising in one point near Danzig to 1020 feet; the other line of elevations begins in Silesia, and terminates in the moorlands of Luneberg, in Hanover, its course being marked by several summits from 500 to 800 feet in height. A large portion of the plain is occupied by sandy tracts, interspersed with deposits of peat; but other parts are moderately fertile, and admit of successful cultivation.

In respect of drainage the surface of Germany belongs to three different basins. The Danube, from its source in the Schwarzwald to the borders of Austria, belongs to Germany, and through this channel the waters of the greater part of Bavaria are poured into the Black Sea, thus opening up communication with the east. The greater part of the surface, however (about 185,000 square miles), has a northern slope, and belongs partly to the basin of the North Sea, and partly to the basin of the Baltic. The chief German streams flowing into the North Sea are the Rhine, the Weser, and the Elbe; into the Baltic, the Oder and the Vistula.

The most important of the numerous canals of Germany are the Ludwig's canal, in Bavaria, connecting the Danube and Main, and thus opening a communication between the Black Sea and the German Ocean; the Finow and Friedrich Wilhelm's canals, in Brandenburg; the Plauze canal, connecting the Elbe and the Havel; and the Kiel and Eyder canal, uniting the Baltic and the German Ocean. Numerous lakes occur both in the table-land of southern Germany, and in the lowlands of the northern district, but few of them are of any great size. Mineral springs occur principally in Nassau, Wurtemberg, Baden, Bavaria, and Rhenish Prussia. Many of these springs have retained their high reputation from the earliest ages.

The climate of Germany presents less diversity than a first glance at the map might lead one to infer, for the greater heats of the more southern latitudes are considerably modified by the alpine character of the country in those parallels, while the cold of the northern plains is mitigated by their vicinity to the ocean. The average decrease in the mean temperature is in going from south to north, about 1° F. for every 52 miles; and in going from west to east, about 1° F. for every 72 miles. The line of perpetual snow varies from 7200 to 8000 feet above the level of the sea. The mean annual fall of rain is 20 inches.

The following table shows the mean temperature at different points:

	MEAN ANNUAL TEMPERATURE.	SUMMER.	WINTER.
Hamburg, . . . . .	47.	64	30
Dresden, . . . . .	48.	67	29
Frankfort-on-the-Main, . . . . .	48.5	66	31
Berlin, . . . . .	46.5	66	27
Hanover, . . . . .	48.	63	33
Königsberg, . . . . .	43.	62	24

Germany is rich in mineral products, among which the most important are silver, found in the Hartz mountains; iron in numerous mountain ranges; salt in many parts of the country; coal in Rhenish Prussia, Silesia. Cobalt, arsenic, sulphur, salt-petre, alum, gypsum, bismuth, pumice-stone, tripoli-slate, kaolin, emery, ochre, and vitriol, are all among the exports of Germany.

The following figures show the product of the principal mining industries of Germany (exclusive of Alsace and Lorraine) for the year 1870:

	NO. OF WORKS.	PERSONS EMPLOYED.	PRODUCT IN CWT.	VALUE IN THALERS.
Coal (including brown coal), . . .	1362	145,782	680,060,074	61,863,399
Iron ore, . . . . .	1258	24,793	58,550,539	7,116,828
Zinc ore, . . . . .	72	9,797	7,335,603	2,315,499
Lead ore, . . . . .	174	18,057	2,111,810	5,511,235
Copper ore, . . . . .	3	6,156	4,147,627	1,619,938

The yield of salt, for the same year, was 14,658,990 hundredweight, from 69 works, employing 4610 persons, and valued at 3,926,650 thalers.

The leading products of the metallurgical industries are given as follows:

	WORKS.	PERSONS EMPLOYED.	AMOUNT PRO- DUCED IN CWT.	VALUE IN THALERS.
Cast iron, . . . . .	631	39,525	29,942,264	49,251,659
Wrought iron (including wire, bars, and manufactured iron of various kinds), . . . . .	354	43,849	17,437,766	57,490,284
Steel, . . . . .	216	12,892	3,399,027	22,747,626
Zinc, . . . . .	53	6,256	1,727,570	10,212,259
Silver, . . . . .	10	1,601	(lbs.) 185,847	5,549,943
Lead (products of), . . . . .	17	1,513	1,195,753	6,951,164
Copper, . . . . .	28	1,971	174,687	4,667,535

The entire production of mines, furnaces, salt works, etc., is given as 824,965,731 hundredweight, valued (including 186,270 pounds of gold and silver) at 246,482,099 thalers.

The vegetable products comprise a very large proportion of the European flora. All the ordinary cereals are extensively cultivated in the north, and largely exported, chiefly from Wurtemberg and Bavaria; hemp and flax, madder, woad, and saffron grow well in the central districts, where the vine, the cultivation of which extends in suitable localities as far north as 51°, is brought to greater cultivation—the best wine-producing districts being the valleys of the Danube, Rhine, Main, Neckar, and Moselle, which are, moreover, generally noted for the excellence of their fruits and vegetables. Tobacco is grown in sufficient quantities for extensive exportation on the Upper Rhine, the Werra, and Oder. The hops of Bavaria have a high reputation, and the chicory grown in that country and in the district between the Elbe and



Weser finds its way all over Europe as a substitute for coffee. The average annual product of cereals is approximately as follows:

Rye, . . . . .	89,000,000 hectolitres.*
Oats, . . . . .	87,000,000 "
Wheat, . . . . .	34,000,000 "
Barley, . . . . .	30,000,000 "

The average annual potato crop amounts to 272,000,000 hectolitres. The production of beets, in 1872, was over 61,000,000 hundredweight. A fair yield of wine about 4,500,000 hectolitres, and of tobacco, about 700,000 hundredweight.

The most extensive forests are found in central Germany, and in some parts of Silesia, while the northwestern parts of the great plain are deficient in wood, the want of which is in some degree supplied by the abundance of turf yielded by the marshy lands. Germany has long been noted for the good breed of horses raised in the northern parts of the continent, while Saxony, Silesia, and Brandenburg have an equal reputation for their sheep-flocks, and the fine quality of the wool which they yield. The rich alluvial flats of Mecklenburg and Hanover are celebrated for their cattle; the forests of northern and central Germany abound in swine, and in small game of various kinds; while the Bavarian Alps afford shelter to the larger animals, the chamois, the red deer and wild goat, the fox, marten, and wolf.

According to the last enumeration of live stock, there were in Germany 3,500,000 horses, 15,000,000 cattle, 30,000,000 sheep, 8,000,000 swine, and 2,000,000 goats. The wool crop for 1869 amounted to 750,000 hundredweight.

Among the fishes of Germany, the most generally distributed are carp, salmon, trout, and eels; the rivers contain also crayfish, pearl-bearing mussels, and leeches. The oyster, herring, and cod fisheries constitute important branches of industry on the German shores of the Baltic and North Seas.

The preservation and cultivation of woods receive almost as much attention in Germany as agriculture, and, like the latter, are elevated to the rank of a science. The larger woods and forests in most of the states belong to the government, and are under the care of special boards of management, which exercise the right of supervision and control over all forest lands, whether public or private. The value of the forests of Germany was, in 1873, estimated at 666,000 thalers.

The oldest and most important of the German industrial arts are the manufactures of linen and woolen goods. The chief localities for the cultivation and preparation of flax, and the weaving of linen fabrics, are the mountain valleys of Silesia, Lusatia, Westphalia, the Harz, and Saxony (for thread laces); while cotton fabrics are principally made in Rhenish Prussia and Saxony. The same districts, together with Pomerania and Bavaria, manufacture the choicest woolen fabrics, including damasks and carpets. Toys, wooden clocks, and wood-carvings, which may be regarded as most a specialty of Germany industry, are carried to the greatest perfection in the Silesian districts of Saxony, Bavaria, and the Black Forest. The best iron and steel manufactures belong to Silesia, Hanover, and Saxony. Silesia probably possesses the finest glass manufactories; while Saxony and Prussia stand pre-eminent for the excellence of their china and earthen wares. Augsburg and Nuremberg dispute with Munich and Berlin the title to pre-eminence in silver, gold, and jewelry work, and the manufacture of philosophical and musical instruments; while Leipzig and Munich claim the first rank for type foundries, printing, and lithography. The leading cities of northern Germany nearly monopolize the entire business connected with the preparation of tobacco, snuff, etc., the distillation of brandies, and the manufacture of sugar from the beet, potato, and other roots; while vinegar and oils are prepared almost exclusively in central and southern Germany.

The constitution of the empire is confederate, under the presidency of the King of Prussia, who bears the hereditary title of German Emperor. He has the right

\* The hectolitre equals 2.75 bushels.

and duty of representing the empire in all respects of international law, of declaring war in the name of the empire, making peace and treaties, etc. For a declaration of war the consent of the Bundesrath is necessary. He is the commander-in-chief of the whole army and navy, in peace as well as in war, except the military powers of Wurtemberg and Bavaria, which—in times of peace only—form separate corps under the command of their respective kings. He names and dismisses the officers and functionaries of the empire. His orders, issued in the name of the empire, must be countersigned by the Chancellor, who, as the first minister of the empire, is by his signature responsible for them.

The legislative powers lie in the *Bundesrath* and the *Reichstag*. The former consists of the delegates of the confederate governments, representing in all fifty-eight votes. The Reichstag has 382 members directly elected by the secret ballot of the people. The bills promulgated by these two assemblies in accordance are compulsory on all governments of the empire, and annul *eo ipso* all possible institutions contradictory to them in the several States.

The empire has no debt. The debts of the separate States amounted, in 1873, to 1,093,800,000 thalers, 589,300,000 of which sum was for railways.

The army consists, on a peace footing, of about 400,000 men; on a war footing, of about 1,300,000. The navy comprises 51 vessels, of which number 47 are steamers, of 77,130 horse-power, 64,198 tons burthen, and carrying 321 guns; and 4 sailing vessels (1 frigate and 3 brigs) mounting 36 guns.

The multiplicity of small States into which Germany was long broken up, opposed great obstacles to the development of commerce; but the difficulty has to some extent been obviated by the establishment of the *Zollverein*, or "Customs confederation." The Hanse Towns, Hamburg and Bremen, do not belong to it, being free ports; but it comprises all the other states of the empire and the grand duchy of Luxembourg.

The estimated value of goods exported, imported, and in transit (by the customs lines) for 1873 was as follows:

Imports, . . . . .	4,257,300,000 marks.
Exports, . . . . .	2,489,000,000 "
In transit, . . . . .	1,233,000,000 "

The merchant navy comprised, in 1873, 4748 vessels, including 253 steamers, with a total of 1,201,358 tonnage.

The railways measured, in 1871, about 13,310 English miles; but these figures represent the length, not of the lines within the limits of the German Empire, but of those which are under German administration, though extending some way into neighboring States.

The various telegraphic lines of the empire (excepting those of Bavaria and Wurtemberg) are now under a central administration, and, in 1874, the whole measured 42,571 kilometres; length of wires, 149,410 kilometres; number of messages, 13,422,511; number of offices, 4992.

The post office forwarded in 1874:

Private letters, . . . . .	521,900,000
Postal cards, . . . . .	47,900,000
Official letters, . . . . .	37,700,000
Parcels, etc., . . . . .	89,700,000
	<hr/>
	697,200,000

Newspapers, . . . . .	349,600,000
Number of offices, . . . . .	7,900

Education is more generally diffused in Germany than in any other part of Europe, and is cultivated with an earnest and systematic devotion not met with, to an equal extent, among other nations. The attendance of children at school, for at

least four or five years, is made compulsory in nearly all the German States, and hence the proportion of persons who cannot read and write is exceedingly small in Germany.

The elementary schools are 60,000 in number, and are attended by 6,000,000 pupils between the ages of six and fourteen. Of the middle schools, including 330 gymnasia and 214 pro-gymnasia and Latin schools, there were in 1873 over 1000, attended by 177,379 pupils. There are 21 universities, with (in 1873) 1620 instructors and 17,858 students. Of polytechnic schools there are ten, with 360 instructors and 4500 students. Besides these there are numerous special schools of technology, agriculture, commerce, mining, metallurgy, military science, navigation, trades, etc. The German academies of art and sciences and conservatories of music enjoy a world-wide reputation. Public libraries—of which there are more than one hundred and fifty—museums, botanical gardens, art collections, and picture galleries are to be met with in most of the capitals and many of the country towns.

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Commission from the GERMAN EMPIRE to the International Exhibition:

- DR. JACOBI, Royal Prussian Actual Privy Superior Government Counsellor and Ministerial Director, President.
- DR. STUVE, Royal Prussian Privy Government Counsellor and Counsellor in the Ministry of Commerce.
- DR. WEDDING, Royal Prussian Counsellor of Mines.
- MR. REITHER, Royal Bavarian Counsellor of Legation.
- MR. VON NOSTITZ WALWITZ, Royal Saxon Envoy Extraordinary and Minister Plenipotentiary.
- BARON VON SPITZEMBERG, Royal Wurtemberg Envoy Extraordinary and Minister Plenipotentiary.
- DR. NEIDHARDT, Grand Ducal Hessian Ministerial Counsellor.
- MR. KAUFMANN, Royal Prussian Counsellor of Commerce.
- DR. KRUGER, Hanseatic Minister, Resident.
- MR. VON HOLLOBEN, Royal Prussian Superior Tribunal Counsellor.
- MR. NIEBERDING, Counsellor in the Office of the Chancellor of the Empire.
- BARON VON ZEDLITZ, Royal Prussian Provincial Counsellor.
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## AUSTRIA.

THE Austrian Empire forms, on the whole, a compact territory with a circumference of about 5349 miles. It is included between  $42^{\circ}$  to  $51^{\circ}$  north latitude, and between  $8^{\circ} 20'$  to  $26^{\circ} 20'$  east longitude. The body of the empire lies in the interior of the European continent, though, by means of the southern projection of Dalmatia, it has about 1200 miles of sea-coast on the Adriatic. With the rest of its circumference, it borders on the States of the Church, Modena, Parma, Italy, Switzerland, Bavaria, Saxony, Prussia, Russia, Moldavia, Wallachia, Servia, Turkey, and Montenegro. Its present provinces embrace an area of 241,123 square miles, and a population which, in 1869, amounted to 35,904,435.

The following table gives the area, number of civil inhabitants, and total population, civil and military, of the various provinces of the empire—distinguishing its two great political divisions, the German monarchy, or Cisleithan Austria, and the Hungarian kingdom, or Transleithan Austria, together with the so-called military frontier, placed under the administration of the ministry of war for the whole empire—according to the official returns for 1869:

PROVINCES.	AREA IN ENGLISH SQ. MILES.	CIVIL POPULATION.	TOTAL POPULATION.
<b>GERMAN MONARCHY.</b>			
Lower Austria, . . . . .	7,658	1,954,251	1,990,708
Upper Austria, . . . . .	4,634	731,579	736,557
Salzburg, . . . . .	2,768	151,410	153,159
Styria, . . . . .	8,674	1,131,309	1,137,990
Carinthia, . . . . .	4,007	336,400	337,694
Carniola, . . . . .	3,858	463,273	446,334
Coast Land, . . . . .	3,085	582,079	600,525
Tyrol and Vorarlberg, . . . . .	11,321	878,907	885,789
Bohemia, . . . . .	20,763	5,106,069	5,140,544
Moravia, . . . . .	8,579	1,997,897	2,017,274
Silesia, . . . . .	1,988	511,581	513,352
Galicia, . . . . .	30,320	5,418,016	5,444,683
Bukowena, . . . . .	4,037	511,964	513,404
Dalmatia, . . . . .	4,942	442,796	456,961
<b>Total German Monarchy, . . . .</b>	<b>116,634</b>	<b>20,217,531</b>	<b>20,934,980</b>
<b>KINGDOM OF HUNGARY.</b>			
Hungary, . . . . .	82,867	11,117,623	11,118,502
Croatia and Slavonia, . . . . .	7,445	1,160,085	1,164,806
Transylvania, . . . . .	21,222	2,101,727	2,115,024
Military Frontier, . . . . .	12,956	1,037,892	1,041,123
<b>Total Hungary, . . . . .</b>	<b>124,490</b>	<b>15,417,327</b>	<b>15,509,455</b>
<b>Total Austro-Hungary, . . . .</b>	<b>241,124</b>	<b>35,634,858</b>	<b>35,904,435</b>

Three-fourths of Austria is mountainous or hilly, being traversed by three great mountain chains—the Alps, Carpathians, and Sudetes, whose chief ridges are of primitive rock. The Alps are accompanied, north and south, by parallel ranges of calcareous mountains, covering whole provinces with their ramifications. The Carpathians are lapped on their northern side by sandstone formations; mountains of the

same character also occupy Transylvania. Springing from the northwest bend of the Carpathians, the Sudetes run through the northeast of Moravia and Bohemia, in which last the range is known as the Riesen gebirge, or Giant mountains. Continuous with this range, and beginning on the left bank of the Elbe, are the Erzgebirge, or Ore mountains, on the confines of Saxony; and veering round to nearly southeast, the range is further prolonged in the Bohemian Forest mountains, between Bohemia and Bavaria. The chief plains of the Austrian empire are: the great plains of Hungary (the smaller of these is in the west, between the offsets of the Alps and Carpathians, and is about 4200 square miles in extent; the other, which is in the east, and traversed by the Danube and the Theiss, has an area of 21,000 square miles), and the plains of Galicia.

From the south point of Dalmatia to the boundary of Italy, Austria has a sea-line of about 1000 miles, not counting the coasts of the numerous islands, the largest of which is Veglia, 23 miles by 12. The chief lakes are: the Platten See, and the Neusiedler See, both in Hungary. The first is navigable by steamers, and both are rich in fish, and have fruitful vineyards around them. The Alps and Carpathians inclose numerous mountain lakes, which are surrounded with wood and rock, and all the other attributes of picturesque scenery. The Long lake in the Tatra mountains lies at an elevation of 6000 feet. The most remarkable of all is the Zirknitz lake, in Illyria. There are extensive swamps or morasses in Hungary. One connected with the Neusiedler See covers some 80 square miles. A good deal has been done in the way of reclaiming lands by draining morasses.

The leading rivers that have navigable tributaries are: the Danube, which has a course of 849 miles within the Austrian dominions, the Vistula, the Elbe, and the Dniester. The Rhine bounds Austria for about fourteen miles above Lake Constance.

The climate of Austria is on the whole very favorable; but from the extent and diversity of surface, it presents great varieties. In the warmest southern region, between 42° to 46° latitude, rice, olives, oranges, and lemons ripen in the better localities; and wine and maize are produced everywhere. In the middle temperate region from 46° to 49°, which has the greatest extent and diversity of surface, the vine and maize still thrive in perfection. In the northern region, beyond 49°, except in favored spots, neither the vine nor maize succeeds; but grain, fruit, flax, and hemp, thrive excellently. The mean temperature of the year is, at Trieste, 58° F.; at Vienna, 51°; at Lemberg, in Galicia, 44°.

The raw products of Austria are abundant and various; and in this respect it is one of the most favored countries in Europe. Its mineral wealth is not surpassed in any European country; it is only lately that Russia has exceeded it in the production of gold and silver. Mining has been a favorite pursuit in Austria for centuries, and has been encouraged and promoted by the government. Bohemia, Hungary, Styria, Carinthia, Salzburg, and Tyrol, take the first place in respect of mineral produce. Except platina, none of the useful metals is wanting. The mines are partly State property, and partly owned by private individuals. Gold is found chiefly in Hungary and Transylvania, and in smaller quantity in Salzburg and Tyrol. The same countries, along with Bohemia, yield silver. The discovery of quicksilver at Idria first brought this branch of mining industry into importance. This metal is now also found in Hungary, Transylvania, Styria, and Carinthia. Copper is found in many districts—tin, in Bohemia alone. Zinc is got chiefly in Cracow and Carinthia. The most productive lead mines are in Carinthia. Iron is found in almost every province of the monarchy, though Styria, Carinthia, and Carniola are chief seats. The production, though great, is not yet equal to the consumption. Antimony is confined to Hungary; arsenic is found in Salzburg and Bohemia; cobalt in Hungary, Styria, and Bohemia; sulphur in Galicia, Bohemia, Hungary, Venice, Salzburg, etc., though not enough to supply home consumption. Graphite is found abundantly in Bohemia, Moravia, Carinthia, etc.

The useful earths and building-stones are to be had in great profusion; all sorts of clay up to the finest porcelain earth (in Moravia, Bohemia, Hungary, Venice), and likewise marble, gypsum, chalk, etc. Of precious and semi-precious stones are the Hungarian opal, which passes in commerce as oriental, Bohemian garnets—the finest in Europe—cornelians, agates, beryl, amethyst, jasper, ruby, sapphire, topaz, etc.

The following table shows the principal metals and minerals produced in Austria in 1867, and their average value in florins at the place of production :

	WEIGHT.	VALUE IN FLORINS.
Gold (Austrian pound), . . . . .	3,562	2,406,041
Silver " . . . . .	81,378	3,655,643
Quicksilver (Austrian hundredweight), . . . . .	5,944	723,958
Tin " " . . . . .	591	33,812
Zinc " " . . . . .	40,296	495,956
Copper " " . . . . .	47,930	4,377,840
Lead and litharge " " . . . . .	136,668	1,770,884
Iron, raw and cast " " . . . . .	5,705,761	16,709,039
Graphite " " . . . . .	279,355	271,123
Mineral coal " " . . . . .	108,488,390	17,322,283

Austria is peculiarly rich in salt. Rocksalt exists in immense beds on both sides of the Carpathians, chiefly at Wieliczka and Bochnia, in Galicia, and in the country of Marmaros in Hungary, and in Transylvania. The annual produce of rock-salt is greatly above three million hundredweight. Salt is also made at State salt-works by evaporating the water of salt-springs. The chief works are those at Hallstadt, Ischl, Hallein, and Hall in Tyrol. From two to three millions hundredweight are thus produced annually. A considerable quantity is also made from sea-water on the coast of the Adriatic. Of other salts, alum, sulphate of iron, and sulphate of copper are the chief. Austria has abundance of mineral springs, frequented for their salubrity; 1600 are enumerated, some of them of European reputation, as the sulphurous baths of Baden, in lower Austria, the saline waters of Karlsbad, Marienbad, and Ofen, etc.

The vegetable productions, as might be expected from the vast diversity in the soil and position of the different provinces, are extremely various. Although three-fourths of the surface is mountainous, more than five-sixths is productive, being used either for tillage, meadows, pasture, or forest. Grain of all kinds is cultivated most abundantly in Hungary and the districts south of it on the Danube, in Bohemia, Moravia, Silesia, and Galicia. Agriculture is not yet far advanced; the prevailing system is still what is called the three-field system, introduced into Germany by Charlemagne, in which a crop of winter wheat is followed by one of summer grain, and that by fallow.

In Hungary, the Magyar adheres to his primitive husbandry; the German and Slave are adopting improved methods. Rice is cultivated in the Banat, but not enough for the consumption. Potatoes are raised everywhere; and in elevated districts, are often the sole subsistence of the inhabitants. Horticulture is carried to great perfection; and the orchards of Bohemia, Austria proper, Tyrol, and many parts of Hungary, produce a profusion of fruit. Great quantities of cider are made in upper Austria and Carinthia, and of plum brandy in Slavonia. In Dalmatia, oranges and lemons are produced, but not sufficient for the requirements of the country; twice as much olive oil is imported as is raised in the monarchy.

In the production of wine, Austria is second only to France. With the exception of Galicia, Silesia, and upper Austria, the vine is cultivated in all the provinces; but Hungary stands first, yielding not only the finest quality of wine, but four-fifths the amount of the whole produce of the empire. The average produce of the whole empire is estimated at about 680 millions of gallons.

Of plants used in manufactures and commerce, the first place is held by flax and

**hemp.** Flax is cultivated almost universally; white hemp in Galicia, Moravia, Hungary, etc. Tobacco is raised in great quantities, especially in Hungary, which also is first in the cultivation of rapeseed. Bohemia raises hops of the first quality, which are partly exported, though other provinces import from abroad. The indigo plant has lately been successfully acclimatized in Dalmatia. More than a third of the productive surface is covered with wood (75,000 square miles), which, besides timber, yields a number of secondary products, as tar, potash, charcoal, bark, cork, etc.

As to animals, bears are found in the Carpathians, Alps, and Dalmatia; wolves, jackals, and lynxes in these same districts, and also in the Banat, Croatia, Slavonia, and the military frontiers. The marmot, otter, and beaver are also found in Dalmatia. Game has of late sensibly diminished. The wild goat lives in the highest, the chamois and white Alpine hare in the middle regions of the Alps and Carpathians. More productive than the chase are the fisheries of the Danube, Theiss, and numerous streams, lakes, and ponds. The chief sea-fishing is in Dalmatia. Leeches, procured chiefly in Hungary and Moravia, form an article of considerable trade. For foreign commerce, the most important branch of rural industry is the rearing of silk.

Austria produces about a quarter a million of silk cocoons annually. The silk trade is very extensive on the Tyrol—the yearly supply of cocoons in that country being about 32,000.

In 1851, the number of horses in the monarchy was stated at 3,229,884 (not including 75,000 belonging to the army); cattle, 10,410,484; sheep, 16,801,545; goats, 2,275,900; and swine, 7,401,300. Nearly three-fourths of the population are engaged in husbandry, so that Austria is decidedly an agricultural State, though its capabilities in this respect have by no means been fully developed.

The annual value of its manufactures—not including small trades—is estimated at 1000 to 1200 millions of florins, while that of its husbandry may reach 3000 millions. Bohemia takes the lead in this industry; then follow Austria proper, Moravia and Silesia, Hungary. Vienna is the chief seat of manufacture for articles of luxury; Moravia, Silesia, and Bohemia for linen, woolen, and glass wares; Styria and Carinthia for iron and steel wares. The chief manufactured articles of export are silken and woolen; the only others of consequence are linen, twist, glasswares, and cotton goods. The yearly value of manufactured iron is about fifty-four millions of florins. The glasswares of Bohemia are of special excellence. The hemp and flax industry is one of the oldest and still most important.

No branch of industry has risen more rapidly than that of cotton. The annual value of the silk industry is estimated at about sixty millions of florins. The manufacture of tobacco is a State monopoly, and produced a revenue in 1873 of 58,126,000 florins. The salt monopoly secured 18,720,000 florins.

The imports for the year 1874 were 565,600,000 florins; the exports were 452,200,000 florins. This is exclusive of Dalmatia—not within the imperial line of customs. The figures for Dalmatia were, during the same year: 9,600,000 florins imports, and 6,600,000 florins exports.

The merchant navy, at the beginning of 1875, comprised 7203 vessels, with a tonnage of 332,005, and an equipment of 27,381 seamen. Of great importance for the commerce of the empire is the Austrian Lloyds. This company owned, on the 1st of January, 1874, a fleet of seventy-six steamers, of 15,800 horse-power.

Since the year 1867 Austria has been a twofold empire, consisting of a German or "Cisleithan" monarchy—Austria proper; and a Magyar or Transleithan kingdom—Hungary. Each of the two countries has its own laws, parliament, ministers, and government; and the formal tie between them is a body known as the Delegations. These form a parliament of 120 members; one-half is chosen by the legislature of Austria, and the other by that of Hungary, the upper house of each returning twenty, the lower house forty delegates. The delegations have jurisdiction over all

matters affecting the common interests of the two countries, especially foreign affairs, war, and finance. The acts of the delegations require to be confirmed by the representative assemblies of their respective countries.

The administration of Austria proper is divided among nine ministries—Foreign Affairs, Police, Public Education, Agriculture and Public Works, Finance, Interior, War and Navy, Commerce, and Justice. The Reichsrath consists of an upper and a lower house. The upper house is constituted by princes, nobles, archbishops, bishops, and life members nominated by the emperor. To give validity to bills passed by the Reichsrath, the consent of both chambers is required, as well as the sanction of the emperor.

The executive of Hungary is carried on in the name of the king by a responsible ministry.

The following figures are extracted from the budget for 1875:

EXPENDITURES.	
Austria, . . . . .	319,916,323 florins.
Hungary, . . . . .	218,558,301 "
General, . . . . .	116,364,502 "
	654,839,126 "
RECEIPTS.	
Austria, . . . . .	283,298,975 florins.
Hungary, . . . . .	209,633,909 "
From duties and other sources, . . . . .	123,315,125 "
	616,248,009 "

The public debt of Austria, on the 1st of January, 1875, was 2,649,484,475 florins; that of Hungary, January 1st, 1873, was 488,717,380 florins.

According to official returns, Austria possessed, in 1875, a standing army numbering 284,435 men on the peace footing, and 785,649 on the war footing.

The naval forces consisted of seventy-one vessels, of a tonnage of 115,380, carrying 308 heavy and 87 light guns. Of this fleet, 47 vessels were steamers, of 100,260 tons burthen.

The length of railways, at the close of 1875, was

In Austria, . . . . .	9,823 kilometres.
" Hungary, . . . . .	6,415 "
Total, . . . . .	16,238 "

The work of the post office in Austria-Hungary for 1874 was as follows:

Letters, . . . . .	253,909,000
Postal cards, . . . . .	28,741,000
Parcels, . . . . .	31,959,000
Newspapers, . . . . .	82,085,000
Number of post offices, . . . . .	6,296

The statistics of telegraphs for the year 1874 are as follows:

Length of lines (Austria-Hungary), . . . . .	45,441 kilometres.
" " wires " . . . . .	129,171 "
Number of offices, . . . . .	2,923 "
" of dispatches, . . . . .	5,797,492 "

Education, since 1849, is under the care of a Minister of Public Worship and Instruction. In the major part of German Austria the law enforces the compulsory attendance in the " Volksschulen," or National Schools, of all children between the ages of six and twelve, and parents are liable to punishment for neglect. It is rarely, however, that cases occur in which penalties for non-attendance at school have to be enforced. The cost of public education mainly falls on the communes, but of late



years the State has come forward to assist in the establishment of schools for primary education.

There are seven universities in the empire. Four of these, the high schools at Vienna, Prague, Graz, and Innsbruck, are called German universities, and were attended as follows, in 1872 :

	PROFESSORS AND TEACHERS.	STUDENTS.
Vienna, . . . . .	200	3881
Prague, . . . . .	97	1709
Graz, . . . . .	70	926
Innsbruck, . . . . .	58	612

Of the other universities, Pesth, the high school of Hungary, had 2500 students at the end of 1873, and Cracow and Lemberg, the high schools for Galicia and the other Slavonian provinces, had, at the same date, together, 1900 students.

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# SWITZERLAND.

SWITZERLAND is an inland country of Europe, situated between  $45^{\circ} 48'$  and  $47^{\circ} 49'$  north latitude, and  $5^{\circ} 55'$  and  $10^{\circ} 30'$  east longitude. Its greatest length from east to west is 180 miles, and its greatest width from north to south, 130 miles.

The following table gives the area and population of each of the 22 cantons, according to the census returns of 1870:

	ENGLISH SQUARE MILES.	POPULATION.
Graubünden, . . . . .	2,968	91,782
Bern, . . . . .	2,561.5	506,465
Wallis (Valais), . . . . .	1,661.6	96,887
Vaud (Waadt), . . . . .	1,181.9	231,700
Ticino (Tessin), . . . . .	1,034.7	119,619
St. Gallen, . . . . .	747.7	191,015
Zurich, . . . . .	685.3	284,786
Luzern, . . . . .	587.4	132,338
Fribourg (Freeburg), . . . . .	563.9	110,832
Aargau, . . . . .	502.4	198,873
Uri, . . . . .	420.8	16,107
Schwyz, . . . . .	338.3	47,795
Neuchâtel (Neuenburg), . . . . .	280.2	97,284
Glarus, . . . . .	279.8	35,150
Thurgau, . . . . .	268.3	93,300
Unterwalden, . . . . .	262.8	26,116
Solothurn, . . . . .	254.6	74,713
Basle, . . . . .	184.6	101,887
Appenzell, . . . . .	152.8	60,635
Schaffhausen, . . . . .	119.7	37,721
Genève (Genf), . . . . .	91.3	93,239
Zug, . . . . .	85.4	20,993
Total, . . . . .	15,233.0	2,669,147

Switzerland is the most mountainous country of Europe. Its principal chains are the Alps and the Jura. The former run from east to west along its southern or Italian frontier. Their ramifications fill more than one-half the country, and terminate along a line which may be traced from Vevey, on the lake of Geneva, to Mount Moleson and Mount Napf, across Lake Zug, to the southern shores of the lakes of Zurich and Wallenstadt, and Sargans on the Rhine. The mean elevation of the highest chain is from 8000 to 9000 feet. The Jura run northeast from the western corner of Switzerland. They consist of a series of parallel ridges inclosing long and narrow valleys, and their mean elevation does not exceed 4000 feet. In the angle formed between them and the Alps lies the plain of Switzerland, a table-land 100 miles in length, and from 20 to 30 miles in width, with a mean elevation of about 1400 feet above the sea. It is not absolutely level, but covered with elevations which seem very unimportant when contrasted with the huge masses of the Alps and Jura. The communication between the plain of Switzerland and the German valleys of the Danube and Rhine is not continuous. The plain terminates in the east in a third hilly tract, the Thur hill country, which lies between the lakes of Zurich and Constance, and, to some extent, forms a barrier between the plain of Switzerland and Germany. The Jura, the plain, and the hill country, are the three great divisions of northern Switzerland. The divisions in the Alpine region are more strongly marked.

in nature. They isolate and inclose (1) the valleys drained by the Rhone which connect Switzerland with southern France; (2) Ticino, drained by streams which descend to the Po, and bring this section into communication with Italy; (3) the Grisons, the most sequestered valleys of Switzerland, drained by the tributaries of the Rhine and Danube, and shut out by mountains from the lower basins of these rivers; (4) Bernese Oberland, which slopes towards the western extremity of the Swiss plain; (5) the district of the Forest Cantons, Schwyz, Uri, and Unterwalden, surrounding the Lake of Lucerne.

In Switzerland the climate chiefly varies with the elevation above the sea level. At a height exceeding 9500 feet the mountains are covered with perpetual snow, which descends along the glaciers to a much lower level, and thus covers the elevated part of the country with a vast sea of ice. Below the level of perpetual snow the surface of Switzerland has been divided into a series of belts, characterized by different climates and productions. The highest of these, lying between the snow and the level of 6900 feet, has been called the Upper Alpine region. In it the glaciers fill the valleys, but plants clothe the scanty soil of the ridges. The second or Lower Alpine belt descends to 4800 feet, and is a country of pastures in which shrubs, but no trees, are seen. In the third belt, which descends to 4350 feet, meadows still abound, but forests of firs and maples, in many parts, replace them. The fourth belt sinks to 3000 feet. Here forests still abound, the beech being the prevailing tree; the meadows are excellent, and rye and barley are successfully cultivated. The fifth belt descends to 1800 feet. In it the oak and walnut are the characteristic forest trees. Spelt and the best wheat are cultivated. The last belt sinks to 750 feet. In it the chestnut is the characteristic tree; the mulberry and vine are extensively cultivated, and wheat is the grain chiefly grown. This belt includes the greater part of the Swiss plain, and sinks to its lowest level in the valley of the Rhine, between Constance and Basle, and the banks of Lake Zurich and Lago Maggiore. In the last district the vegetation is that of northern Italy. The most populous part of Switzerland lies between 1250 and 2150 feet. The temperature of this region is fairly represented by that of Zurich, which averages, for the year, 47.95°.

The German language is spoken by the majority of the inhabitants in sixteen cantons, the French in four, and the Italian in two. It is reported in the census returns of 1870 that 384,561 families speak German, 134,183 French, and 30,293 Italian. According to the same returns there were but five towns in Switzerland with more than 20,000 inhabitants, namely, Geneva, seat of the watch and jewelry industry, with 46,783; Basle, centre of the silk industry, with 44,834; Bern, political capital, with 36,001; Lausanne, with 26,520; and Zurich, with 21,199 inhabitants. The soil is pretty equally divided among the population, it being estimated that four-fifths of the inhabitants are land owners. Of every 100 square miles of land 20 are pasture, 17 forest, 11 arable, 20 meadow, 1 vineyard, and 30 uncultivated, or occupied by lakes, rivers, and mountains.

According to the census of 1870 there are 1,095,447 individuals supported, either wholly or in part, by agriculture. At the same date, the manufactories employed 216,468 persons, the handicrafts 241,425. In the canton of Basle the manufacture of silk ribbons employs 6000 persons, with a total annual production valued at \$7,000,000. In the canton of Zurich silk stuffs, to the value of about \$8,000,000, are made by 12,000 operatives. The manufacture of watches and jewelry in the cantons of Neuchatel, Geneva, Vaud, Bern, and Solothurn, employ 36,000 workmen, who produce annually 500,000 watches—three-sevenths gold, four-sevenths silver—valued at \$9,000,000. In the cantons of St. Gall and Appenzell, 6000 workers make \$2,000,000 worth of embroidery annually. The printing and dyeing factories of Glarus turn out goods to the value of \$3,000,000, per annum. The manufacture of cotton goods occupies upwards of 1,000,000 spindles, 4000 looms, and 20,000 operatives, besides 38,000 hand-loom weavers.

The Federal custom house returns classify all imports and exports under three chief headings, namely, live stock, *ad valorem* goods, and goods taxed per quintal. No returns are published of the value of imports or exports: only the quantities are given. The following table shows the imports and exports during the year 1871:

## IMPORTS.

Live stock, . . . . .	256,851 head.
Agricultural instruments, carts, and railway carriages for travelers and merchandise, <i>ad valorem</i> , . . . .	1,043,991 francs.
Goods taxed per quintal, including loads reduced to quintals, . . . . .	25,450,359 quintals.

## EXPORTS.

Live stock, . . . . .	127,490 head.
Wood and coal, <i>ad valorem</i> , . . . . .	5,351,941 francs.
Goods, per load and quintal, . . . . .	4,086,646 quintals.

The present constitution vests the supreme legislative and executive authority in a parliament of two chambers, a Standerath, or State Council, and a Nationalrath, or National Council. The first is composed of 44 members, chosen by the 22 cantons—2 for each canton. The Nationalrath consists of 135 representatives, chosen by popular vote, at the rate of one deputy for every 20,000 souls. A general election for representatives takes place every three years. Both chambers united are called the Bundesversammlung, or Federal Assembly, and as such represent the supreme government of the republic. The chief executive authority is deputed to a Bundesrath, or Federal Council, consisting of seven members elected for three years by the Federal Assembly. The president and vice-president of the Federal Council are the first magistrates of the republic. Both are elected by the Federal Assembly for the term of one year, and are not re-eligible until after the expiration of another year. Independent of the Federal Assembly, though issuing from the same, is the Bundes-Gericht, or Federal Tribunal, consisting of eleven members, elected for three years. The Federal Tribunal decides, in the last instance, on all matters in dispute between the various cantons, or between the cantons and the Federal government, and acts in general as a high court of appeal. Each of the Swiss cantons and demi-cantons has its local government, different in organization in most instances, but all based on the absolute sovereignty of the people.

In the budget estimates for the year 1875 the total revenue is set down at 39,516,000 francs,\* and total expenditure at 39,266,000 francs. The public debt of the republic amounted, at the commencement of 1875, to 30,635,552 francs, as a set-off against which there was a so-called Federal fortune, or property belonging to the State, valued at 31,783,303 francs.

The fundamental laws of the republic forbid the maintenance of a standing army within the limits of the confederation. The troops are divided into three classes: 1, the Bundes-Auszug, or Federal army, consisting of all men able to bear arms from the age of 20 to 30; 2, the army of reserve, consisting of all men who have served in the first class, from the age of 31 to 40; 3, the Landwehr, or militia, comprising all men from the 41st to the completed 44th year. The strength of the armed forces of Switzerland, at the end of 1874, was as follows:

Staff, . . . . .	841
Bundes-auszug, . . . . .	84,369
Reserve, . . . . .	50,069
Landwehr, . . . . .	65,981
Total, . . . . .	201,260

\* One franc = 19.3 cts. gold.

From official returns it appears that the railways open for public traffic in Switzerland had, at the end of 1874, a total length of 1024 English miles.

The post office of Switzerland forwarded, during the year 1874, 63,252,884 letters; 19,925,200 packets, and 45,651,344 newspapers.

At the end of September, 1875, there were 3736 miles of telegraph lines and 9538 miles of wires. The number of messages sent, in the year 1874, was 2,625,104; number of offices, 815. The entire telegraph system belongs to the State.

In no country is elementary instruction more widely diffused. Parents are compelled to send their children to school from five to twelve, but not above that age. There are universities on the German model at Basle, Bern, and Zurich, and academies on the French plan at Geneva and Lausanne. The number of clubs for scientific, literary, musical, and social purposes, is remarkable. There are few pursuits to which any class of men can devote themselves which are not represented in Switzerland by societies.

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# BELGIUM.

BELGIUM lies between latitude  $49^{\circ} 27'$  and  $51^{\circ} 30'$  north, and between longitude  $2^{\circ} 33'$  and  $6^{\circ} 5'$  east. It is bounded on the north by Holland; on the east by Dutch Limbourg, Luxembourg, and Rhenish Prussia; on the south and southwest by France; and on the northwest by the North Sea. Its greatest length, from northwest to southeast, is 173 English miles; and its greatest breadth, from north to south, 112 English miles. The whole area is 11,313 square miles. The following table gives a list of the provinces in Belgium, with the area, population, and chief town of each:

PROVINCES.	AREA IN SQ. MILES.	POPULATION (1870).	CHIEF CITIES.
Antwerp, . . . . .	1,094	492,482	Antwerp.
West Flanders, . . . . .	1,243	668,976	Bruges.
East Flanders, . . . . .	1,154	837,726	Ghent.
Hainault, . . . . .	1,430	896,285	Mons.
Liege, . . . . .	1,111	592,177	Liege.
Brabant, . . . . .	1,260	879,814	Brussels.
Limbourg, . . . . .	929	200,336	Hasselt.
Luxembourg, . . . . .	1,695	205,784	Arlon.
Namur, . . . . .	1,397	313,525	Namur.
Total, . . . . .	11,313	5,087,105	

Belgium is the most densely populated country in Europe, the population being about 404 to the square mile; and in the particular provinces of East Flanders, 675; Brabant, 594; Hainault, 537; and West Flanders, 502, respectively, to the square mile. The rural population bears to that of the towns a proportion of about 3 to 1. About 58 per cent. of the inhabitants are Flemish, the rest Walloon and French, with 39,000 Germans in Luxembourg. Belgium is, on the whole, a level and even low-lying country; diversified, however, by hilly districts. In the southeast, a western branch of the Ardennes highlands makes its appearance, separating the basin of the Maas from that of the Moselle, but attains only the moderate elevation of 2000 feet. In Flanders the land becomes so low that in parts where the natural protection afforded by the downs is deficient, dikes, etc., have been raised to check the encroachments of the sea. In the northeast part of Antwerp, a naturally unfertile district named the Campine, and composed of marshes and barren heaths, extends in a line parallel with the coast. The once impassable morasses of the *Morini* and the *Menapii*, which stayed the progress of Caesar's legions, are now drained, and converted into fertile fields, surrounded by dense plantations, which make the land at a distance look like a vast green forest—though, when more closely regarded, we see only numerous dwellings interspersed among fields, canals, and meadows.

The abundant water-system of Belgium is chiefly supplied by the rivers Scheldt and Maas, both of which rise in France, and have their embouchures in Holland. At Antwerp, the Scheldt, which, like the Maas, is navigable all through Belgium, is 32 feet deep, and about 480 yards wide. Its tributaries are the Lys, Dender, and Rupel. The Maas, or Meuse, receives in its course the waters of the Sambre, the Ourthe, and the Roer. These natural hydrographical advantages are increased by a system of canals which unite Brussels and Louvain with the Rupel, Brussels with Charleroi, Mons with Conde, Ostend with Bruges and Ghent, and this last place with Terneuse. The climate of Belgium, in the plains near the sea, is cool, humid, and somewhat unhealthy; but in the higher southeast districts, hot summers alternate with very cold winters. April and November are always rainy months. The geological formations

of Belgium are closely associated with France and Britain. The greater portion of the country is covered with tertiary deposits. A line drawn across the course of the Scheldt, by Mechlin, along the Demer and Maas, will have on its northern and northwestern aspect a tract of tertiary deposits, bounded northwards by the sea. In these tertiary strata the different geological periods are fully represented; but only the second, containing the Pleiocene deposits, is rich in fossils. The secondary deposits occupy an extensive tract in the centre of Belgium, between the Scheldt and the Demer. The most important district, economically, is the southwestern, consisting of palæozoic rocks—Silurian, Devonian, and Carboniferous. These beds have a very complicated structure, from the numerous and extensive flexures and folds they have undergone, and these are often accompanied with great upward shifts, by which beds of many different ages are brought to the same level. Belgium is rich in minerals, which, next to its abundant agriculture, constitute the chief source of its national prosperity. The four provinces in which they are found are Hainault, Namur, Liege, and Luxembourg. They include lead, copper, zinc, calamine, alum, peat, marble, limestone, slate, iron, and coal. Lead is wrought, but only to a small extent, in Liege; copper in Hainault and Liege; manganese in Liege and Namur; black marble at Dinant; slates at Herbemont; and calamine principally at Liege. But these products are insignificant compared to the superabundance of coal—from anthracite to the richest gas coal—and iron.

In the year 1871, the total coal production of Belgium amounted to 13,733,176 tons, of a total value of 153,803,000 francs. Number of hands employed in the coal mines of Belgium, 94,186. The average daily pay of the workmen, in 1871, was 2½ francs per day; average cost of production, 9½ francs per ton of coal. The Ardennes districts yield a large supply of wood; while the level provinces raise all kinds of grain—wheat, rye, barley, oats, etc., leguminous plants, hemp, flax, colza, tobacco, hops, dye-plants, and chicory. Belgium contains upwards of 7,000,000 acres, of which one-half is arable, rather more than one-fifth in meadow and pasture, the same in woods and forests, and not above 500,000 acres lying waste. Some hundreds of acres are devoted to vineyards, but the wine produced is of an inferior quality. The forests of Ardennes abound in game and other wild animals. Good pasturage is found on the slopes and in the valleys of the hilly districts, and in the rich meadows of the low provinces. Gardening occupies not less than 130,000 acres; indeed, it has been said that the agriculture of Belgium is just gardening on a large scale, so carefully and laboriously is every inch of soil cultivated. The spade is still the principal instrument used. In the Campine, the care of bees is very productive, and the cultivation of the silkworm is encouraged. There are valuable fisheries on the coast, which, in 1871, employed 263 boats, with a tonnage of 8963. Belgium is famous for its horses, and in one year contained 294,537 of these animals, 1,203,891 horned cattle, and 662,508 sheep.

Wool is the object of an immense industry, the woollen manufactures of Verviers and its environs alone employing a population of 50,000 operatives. Flannels, serges, camlets, carpets, flax fabrics, silks, velvets, fine laces, ribbons, hosiery, hats, paper, etc., are extensively and profitably manufactured. The working of metals, as iron, copper, and tin, is very important; the manufacture of cannon, firearms, and locomotive engines being an especial feature of the metallurgical industry of Belgium.

The foreign trade of Belgium is officially divided into "general commerce," including the sum total of all international mercantile intercourse, and "special commerce," comprising such imports as are consumed within and such exports as have been produced in the country. The following table gives the value of both the general and special exports for the year 1873:

General imports, . . . . .	2,424,800,000 francs.
" exports, . . . . .	2,164,900,000 "
Special imports, . . . . .	1,422,700,000 "
" exports, . . . . .	1,158,600,000 "

The statistics of the Belgian merchant navy for 1873, are—

	NO.	TONNAGE.
Sailing vessels, . . . . .	41	16,434
Steam " . . . . .	28	30,005
Total, . . . . .	69	46,439

Belgium is a constitutional, representative, and hereditary monarchy. The legislative power is vested in the King, the Chamber of Representatives, and the Senate. The Chamber of Representatives is composed of deputies chosen directly by all citizens paying a small amount of direct taxes. The number of deputies is fixed according to the population, and cannot exceed one for every 40,000 inhabitants. The Senate is composed of exactly one-half the number of members composing the other chamber, and are elected by the same citizens who appoint the deputies. The public expenditures of Belgium, for 1875, were 238,281,441 francs; receipts during the same year, 243,032,600 francs. The total public debt, in 1875, was 1,127,040,009 francs. The standing army is formed by conscription, to which every able-bodied man, who has completed his nineteenth year, is liable. Substitution is permitted. The actual number of soldiers under arms, on the 1st of January, 1875, was 103,893.

In Belgium the State is a great railway proprietor, and the State railway is one of the largest sources of national revenue. As each conceded railway lapses gratuitously to the State in 90 years from the period of its construction, the entire system will in time become national property. There were, at the end of 1875, 1933 kilometres of railways owned by the State, and 1479 worked by companies; in all 3432 kilometres. (The kilometre = 1093 yards.)

The work of the post office for 1874, was—

Number of offices, . . . . .	479
Private letters, . . . . .	58,036,628
Official " . . . . .	6,035,861
Newspapers, . . . . .	58,825,598
Packets (printed matter, etc.), . . . . .	30,094,027

There were, on the 1st of January, 1875, telegraph lines of a length of 4909 kilometres; length of telegraph wires, 20,512 kilometres; telegraph stations, 574.

Elementary education is not yet generally diffused among the people. The schools are supported by the communes, the provinces, and the State combined. Education is not compulsory. In the budget for the year 1874, the sum voted by the Chamber of Representatives for public education amounted to 9,701,628 francs.

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# NETHERLANDS.

THE Kingdom of the Netherlands lies between 50° 43' and 53° 36' north latitude and 3° 22' and 7° 16' east longitude, is bounded on the north by the North Sea, east by Hanover and the western part of Prussia, south by Belgium, west by the North Sea. Its greatest length, from north to south, is 195 English miles; its greatest breadth from the west, on the North Sea to the extremity of Overysse, on the east, 110 English miles. It contains 12,637 square miles, including the grand duchy of Luxembourg (which, although possessed of a separate administration, is connected with the kingdom in the person of the sovereign). The entire population, in 1872, was 3,835,111.

The following table gives the population (1872) and area of the provinces, including the reclaimed Haarlem Lake:

	AREA IN SQUARE MILES.	POPULATION.
North Brabant, . . . . .	1,985	435,262
Gelderland, . . . . .	1,972	436,029
South Holland, . . . . .	1,176	700,499
North Holland, . . . . .	966	591,338
Zeeland, . . . . .	642	181,532
Utrecht, . . . . .	531	175,037
Friesland, . . . . .	1,267	300,257
Overysse, . . . . .	1,308	256,681
Groningen, . . . . .	907	228,883
Drenthe, . . . . .	1,029	106,713
Limburg, . . . . .	854	225,352
	<hr/>	<hr/>
Grand Duchy of Luxembourg, . . . . .	12,637	3,637,583
	<hr/>	<hr/>
Total, . . . . .	13,627	3,835,111

The land is generally low, much of it being under the level of the sea, rivers, and canals, especially in North and South Holland, Zeeland, the southern part of Gelderland, and Friesland. Along the west coast the low lands are protected from the sea by a line of sand-hills, or dunes, and where that natural defence is wanting strong dykes have been constructed to keep back the waters, and are maintained at great expense. The greatest of these dykes are those of the Helder and of Walcheren. Engineers, called the officers of the Waterstaat, take special charge of the dykes and national hydraulic works. A large district stretches from Prussia through Drenthe, Overysse, the Veluwe, or Arnhem district of Gelderland, the eastern part of Utrecht, into the Betuwe or country between the Maas and the Waal. This tract has many pretty spots, is of a light sandy soil, well watered, and when not cultivated, is covered with heath or oak-coppice. The greater portion of the north is very fertile, the low lands and drained lakes called Polders, being adapted for pasturing cattle, and the light soils for cereals and fruits; but in some districts there are sandy heath-clad plains, extensive peat-lands and undrained morasses, which industry is rapidly bringing under cultivation.

The islands may be divided into two groups, of which the southern, formed by the mouths of the Schelde and Maas, contains Walcheren, South and North Beveland, Schouwen, Duiveland, Tholen, St. Philipsland, Goeree, Voorne, Putten, Beerland, Ysselmonde, Rozenburg, and the island of Dordrecht. The northern group

contains the islands at the entrance of the Zuyder Zee and along the coast of Groningen and Friesland, as Wieringen, Texel, Vlieland, Terschelling, Ameland, Schiermonnikoog, and Rottum. In the Zuyder Zee are Marken, Urk, and Schokland. The chief rivers are the Rhine, Maas, and Scheldt. Important branches of these are the Waal, Lek, Yssel, Roer, etc.

Water ways are more numerous than in any other European country, the immense tracts of meadow-land and the fertile polders being girdled by large canals, and cut in all directions by smaller ones for drainage and communication. Those of most importance to the national trade are, the North Holland canal, constructed 1819-1825, to connect the port of Amsterdam with the North Sea; the Voorne canal, from the north side of Voorne to Hellevoetsluis, which shortens the outlet from Rotterdam; the South Willemvaart, through North Brabant, Dutch and Belgian Limburg, from Hertogenbosch to Maastricht, being  $71\frac{1}{2}$  English miles in length, and having 24 locks. Besides these, there are numerous important canals, connecting rivers, and cutting the kingdom into a network of water-courses. To improve the entrances to the Maas, the Hock, of Holland, has lately been cut. The new canal through the Y will be nowhere less than 80 yards broad, with sluices nearly 400 feet in length, and a depth of nearly 23 feet. It will reduce the distance from Amsterdam to the sea to about 15 miles, and gives a safe way for large ships.

The climate of the Netherlands is variable, chilly colds often closely succeeding high temperatures, inducing various forms of fever and ague, and requiring peculiar care as to clothing, etc. In summer, the thermometer sometimes rises above  $80^{\circ}$ , and even to  $90^{\circ}$  F. in the shade, and a winter of great severity usually occurs every fifth year, when carriages and heavily laden wagons cross the rivers and the Y on the ice, and thousands enjoy the national pastime of skating.

The farms are generally small and well cultivated. The leading agricultural products of Zeeland are wheat and madder; in South Holland, madder, hemp, butter, and cheese; in North Holland, butter and cheese are extensively made, and cattle, sheep, and pigs reared and exported. The horses of Friesland, Zeeland, and Gelderland are of first-rate quality. The exportation of butter from Holland and Friesland, and of Edam, Leyden, Gonda, and Frisian cheese, is quite large. Fruit is abundant, and in several provinces, as Gelderland, Utrecht, and Drenthe, much attention is paid to bees. In Haarlem and neighborhood, tulips and hyacinths are much cultivated, realizing a large annual amount. Wild ducks, snipes, plovers, and hares are plentiful; and there are also conies, partridges, pheasants, and deer—game forming an article of export.

The Netherlands are of recent formation, and consist of an alluvial deposit, chiefly of a deep, rich clayey soil, superimposed on banks of sand, marine shells, and beds of peat and clay. It appears that at some distant period there has been a depression of the land below its former level, enabling the sea to burst through its sand-banks, submerge the land, and form new deposits. The higher districts are composed of sand-drift mingled with fertile earths, and resting on a bed of clay. Coal is worked in Limburg; and a soft sandstone, which becomes fit for building purposes after having been some time exposed to the atmosphere, is quarried in the southern part of that province, which has also pipe and other clays. Valuable clays for pottery, tile, and brick making, abound in the various provinces.

The chief manufactures are linen, woolen, cotton, and silk fabrics; paper, leather, glass, etc. Leyden and Tilburg are famed for woolen blankets, wool-dyed pilot, fine cloths, and friezes; Hertogenbosch for linens and rich damasks; calicoes, shirtings, drills, tablecloths, striped dimities are made at Almelo, Amersfort, and in the leading towns of Overysse. Good imitation Smyrna and Scotch carpets, and carpets of hair and wool, are manufactured at Deventer, Delft, Arnhem, Hilversum, Utrecht, and Breda; Turkey-red yarns, dyed silks, and silk stuffs at Roermond, Utrecht, Haarlem, etc.; leather, glass, firearms, at Maastricht and Delft; iron-founding, rolling and hammering of lead and copper, cannon-founding are carried

on at the Hague, etc.; and powder-mills at Muiden; Oudenkerk, Middelburg, Hertogenbosch, Amsterdam, Nymegen, etc., have important breweries. Waalwyk, Heusden, and surrounding districts, manufacture boots and shoes, of which Heusden sends to North and South Holland 1,000,000 pairs annually. Gin is distilled at Schiedam, Delft, Rotterdam, and Weesp. Amsterdam has the largest diamond-cutting trade in the world, 10,000 persons depending on that branch of industry. Sugar refining is largely carried on at Amsterdam, Rotterdam, and Dordrecht, from all of which sugar is exported to Russia, the Levant, and countries of Europe. Paper is chiefly made in Holland and Gelderland. The leading letter-type founders are at Amsterdam and Haarlem. Manufactures of every kind are being rapidly increased in number, and adding to the material prosperity of the Netherlands. The chief motive power is the windmill, which forms a never-failing element in the scenery; but of late years steam is becoming more general.

Fishing, not only in the inland waters, the coasts and bays of the North Sea, but also on the coast of Scotland, is vigorously pursued. In 1872 the total value of the herrings taken in the North Sea was about \$450,000, 108 vessels having been employed; on the Netherland coasts, to the value of about \$250,000, and in the Zuyder Zee, additional, 18,052,000 herrings were taken. The anchovy take, almost exclusively in the Zuyder Zee, amounted to 9000 anker, valued at about \$90,000. There are productive oyster beds, besides extensive fishings of cod, ling, turbot, flounders, soles, shrimps, haddock, etc.; and from the rivers, salmon, eels, perch, etc.

The foreign commerce of the Netherlands, during the year 1873, was as follows:

	IMPORTS. IN GUILDERS.	EXPORTS. IN GUILDERS.*
Europe, . . . . .	533,390,000	459,799,000
America, . . . . .	39,838,000	8,125,000
Asia, . . . . .	23,207,000	435,000
Africa, . . . . .	2,747,000	890,000
Other countries, . . . . .	298,000	1,000
	<hr/> 599,480,000	<hr/> 469,250,000

#### COLONIAL POSSESSIONS.

Java, . . . . .	82,485,000	45,083,000
West Indies, . . . . .	119,000	302,000
	<hr/> 682,084,000	<hr/> 514,635,000

The Guinea coast is not included in the above, the statistics for 1873 not being at command. During 1872, the imports 26,000, the exports 137,000 guilders. At the end of 1874 the merchant navy numbered 1827 vessels of 511,982 tons.

The constitution vests the whole legislative authority in a parliament composed of two chambers, called the States-General. The Upper House, or First Chamber, consists of 39 members, elected by the provincial states, from among the most highly assessed inhabitants of the various counties. The Second Chamber of the States-General, elected by ballot, at the rate of one deputy to every 45,000 souls, numbered 80 members in 1875. All citizens, natives of the Netherlands, not deprived of civil rights, and paying assessed taxes to the amount of not less than 20 guilders, are voters. Clergymen, judges of the High Court of Justice, and governors of provinces, are debarred from being elected. Every two years one-half the members of the Second Chamber, and every three years one-third of the members of the Upper House, retire by rotation. The Second Chamber has the initiative of new laws, and the functions of the Upper House are restricted to either approving or rejecting them, without the right of inserting amendments. The king has full veto power, but it is rarely, if ever, exercised. The executive authority is, under the

\* The guilder equals 40 cents gold.

sovereign, exercised by a responsible council of ministers. The budget estimates for the year 1874, were as follows: Total revenue, 93,742,144 guilders; total expenditure, 93,742,144; estimated deficit, 6,244,740 guilders. The financial estimates are always framed with great moderation, generally showing a deficit, which, in the final account, becomes a surplus. There is a separate budget for the great colonial possessions in the East Indies. The Netherlands East India estimates, for 1874, are thus summarized:

	GUILDERS.
Revenue from receipts in the Netherlands, . . . . .	48,958,967
“ “ “ in India, . . . . .	74,639,232
	<hr/>
	123,598,199
	<hr/>
Expenditure in the Netherlands, . . . . .	17,956,922
“ “ India, . . . . .	95,096,698
	<hr/>
	113,053,620
Contribution in aid of the Home Government, for 1874, . .	10,544,579
	<hr/>
	123,598,199

At the commencement of the year 1874, the national debt was represented by a capital of 927,320,076 guilders. The regular army stationed in the Netherlands comprised, on the 1st of July, 1875, 1935 officers and 59,491 men. The colonial army, on the 1st of January, 1875, comprised 27,475 men, 12,310 of whom were Europeans, and 15,165 natives. The navy, on the 1st of July, 1875, consisted of 88 steamers, carrying 474 guns, and 27 sailing vessels, with 195 guns. At the beginning of the year 1875, there were 1668 kilometres of railway opened for traffic. Of these, 853 belonged to private companies and 815 to the State. The number of post offices at the commencement of 1875 was 1241; the number of letters carried during the year, 44,396,330. The length of telegraph lines, January 1st, 1875, was 3431 kilometres; the length of wires, 12,365 kilometres; the number of offices, 328. During the year 1874 the number of telegrams carried was 2,084,121. Under the working of the primary instruction law, there were, in January, 1871, according to government returns, 2608 public schools, with 6538 schoolmasters and 477 schoolmistresses, and 1119 private schools with 2332 schoolmasters and 1565 schoolmistresses. At the same date the pupils in the public schools numbered 390,129, and the pupils in the private schools, 111,762. There were, also, in 1871, 81 schools of middle instruction, with 7047 pupils, and 55 Latin schools, with 1128 pupils. There are three universities, Leyden, Groningen, and Utrecht, with 1339 students in January, 1871, and a polytechnic institution, at Delft, with 171 pupils.

#### COLONIES.

The colonial possessions of the Netherlands embrace an area of 666,756 English square miles. The total population, according to the last returns, was 24,386,991.

The East Indian island of Java, possessing, with the adjoining Madura, an area of 51,336 English square miles, and a population, at the end of 1872, of 17,298,200, is by far the most important of the colonial possessions of the Netherlands. The whole of the other Netherlands possessions in the East Indies are administered as dependencies of Java.

Almost the entire trade of Java and Madura is with the Netherlands, and there is comparatively little commercial intercourse with other countries. The total imports, including specie, for 1873, were 108,304,000 guilders; total exports, including specie, 155,881,000 guilders. The principal articles of export from Java are sugar, coffee, rice, indigo, and tobacco. The imports of the other East Indian possessions, during 1873, were 42,486,000 guilders; the exports, 41,867,000 guilders.

The Dutch West India Islands, of which Curacao is the most important, have a total population of 36,160, and an area of about 400 square miles. Surinam, with an area of about 45,000 square miles has a population of 69,834.

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# DENMARK.

DENMARK is situated between  $54^{\circ} 23'$  and  $57^{\circ} 54' 50''$  north latitude, and  $8^{\circ} 5'$  and  $12^{\circ} 45'$  east longitude, excepting the small island of Bornholm in the Baltic, about ninety miles east of Seeland, which lies in  $15^{\circ}$  east longitude. Denmark is bounded on the north by the Skager Rack, a gulf of the North Sea; on the east by the Cattegat, the Sound, and the Baltic; on the south by the German Empire; and on the west by the North Sea, which the Danes call the "Western Ocean."

The kingdom of Denmark has an area of 14,553 English square miles,	
and a population (in 1874) of about . . . . .	1,860,000
Faroe Islands, . . . . .	} 128,000
Iceland, . . . . .	
Greenland, . . . . .	
Danish possessions in the West Indies, . . . . .	
Total, . . . . .	1,988,000

The chief pursuits are agriculture, cattle-breeding, navigation, and fishing, about one-half of the population being engaged in these industries.

The annual yield of grain may be calculated at about 100,000,000 bushels, beside 200,000,000 barrels of potatoes, beans, etc. About three-fourths of the whole country is under cultivation. The raising of horses and cattle is quite an important interest; the statistics of live stock are, approximately, as follows: horses, 350,000; cattle, 1,250,000; sheep, 1,900,000; hogs, 450,000.

The exports consist mainly of grain, flour, horses, cattle, hogs, meat, pork, butter, wool, hides and skins, beer, brandy, train oil, etc. The principal imports are iron, coal, salt, sugar, coffee, tea, wood, cotton cloth, tobacco, rice, etc.

Of manufactures, the most important are china ware, terra cotta, tiles, crockery, glass, tobacco, linen, cloth, paper, and soap. There are large woolen mills, sugar refineries, iron foundries, machine shops, dockyards, distilleries, tanneries, etc.; flour mills can be found in all sections of the country. The commerce is not inconsiderable, and Danish joiners' work, gold and silver ware, watches, gloves, terra cotta, etc., find ready sale abroad.

The merchant navy consisted, in 1875, of 2766 sailing vessels of 183,740 registered tons; 114 steamships of 24,323 registered tons, making a total of 2880 vessels of 208,063 registered tons.

The national wealth of Denmark is estimated at 4500 millions of crowns,\* of which 3400 millions is real estate and 1100 millions capital, or about 2200 crowns to each individual.

In the 350 savings banks of the country, there were deposited, at the end of 1874, 194,308,902 crowns.

The army numbers, in all, 52,000 men. The navy consists of three iron-clad frigates and eight iron-clad corvettes, carrying 79 guns; three frigates, three corvettes, and five schooners, carrying 136 guns; twelve iron gunboats, carrying 17 guns. Also, transports, etc.

The budget for 1876-77 estimated the revenue at 50,008,843 crowns against an expenditure of 46,885,045 crowns. The public debt, April 1st, 1876, was 181,117,700 crowns against 262,034,296 crowns in 1869. The debt has, in five years, been reduced by more than 80,000,000 crowns.

(The foregoing statistics are furnished by the Danish Commission.)

\* The Danish crown = 26 4-5 cents, gold.

The length of railways in the kingdom, at the end of 1874, was 1024.5 kilometres, of which 665 belonged to the State and 359.5 to companies.

The work of the post office for the year 1873-74 was 16,487,777 letters, and 15,134,812 newspapers.

The length of telegraph lines, 2545 kilometres; length of wires, 7049 kilometres; number of offices, 174; messages in 1874, 762,609.

Elementary education is widely diffused in Denmark, attendance at schools being obligatory from the age of seven to fourteen. Instruction is furnished gratuitously in the public schools to children whose parents cannot afford to pay for their teaching. Besides the university of Copenhagen, there are thirteen public gymnasia in the principal towns of the kingdom, which afford a classical education, and under them are a large number of middle schools, for the children of the trading and higher working classes. Instruction at the public expense is given in the parochial schools, of which there were, in August, 1869, 28 in Copenhagen, 132 in the towns, and 2780 in the rural districts.

Denmark is a constitutional monarchy. The people are efficiently represented, and have a voice in all public matters. The press is virtually free, and only answerable to law. The national assembly consists of the Folksting and Landsting, and is invested with very extensive powers; it meets annually for two months, but the deputies are elected triennially, and receive a fixed allowance during their sittings. The several colonies are governed by governors or high bailiffs, nominated by and alone responsible to the crown. The king has a privy council, in which there are associated with him the heir-apparent and eight members.

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THOMAS SCHMIDT, Commissioner.



# SWEDEN.

SWEDEN and Norway (Sverige and Norge), two independent kingdoms, but under a common king, form the Scandinavian peninsula, whose shores are washed by the waters of the Gulf of Bothnia, the Baltic, the Sound, the Kattegat, the Skager-Raek, the North Sea, the Atlantic and Arctic Oceans, and is thus completely separated from the mainland, with the exception of its northeastern part. The length of its coast, which is indented with numerous bays and fiords, and protected from the brunt of the sea by innumerable islands and rocks, may be estimated at about 3200 English miles, each kingdom possessing about one-half. The Scandinavian peninsula, of which Sweden forms the eastern and southern part (58 per cent.), while Norway makes up the rest (42 per cent.), embraces an area of 13,830 geographical square miles (294,000 English square miles). The united kingdoms have a population of rather more than six millions, of which 70 per cent. belong to Sweden, and 30 per cent. to Norway. The statistics of Norway are given elsewhere in this catalogue.

Although Sweden extends northward to latitude  $69^{\circ} 3' 21.1''$ , thus passing beyond the Arctic circle, it reaches southward to latitude  $55^{\circ} 20' 18''$ , coming within the latitude of its neighboring state, Denmark, and even further south than that part of Prussia which projects northward along the eastern shore of the Baltic. The total length of Sweden, from north to south, is about 950 English miles, and the width from 200 to 250 English miles. The observatory of Sockholm lies  $18^{\circ} 3' 29.85''$  east of Greenwich.

The *läns* (governments or departments) are the largest administrative divisions of the country, and frequently have two names, one of which is derived from the seat of government, the other usually from the old division of the provinces. The geographic division of the kingdom into three parts stands in intimate relation with the old provincial division. The three geographical divisions are as follows: Svealand (the central), Götaland (the southern), and Norrland (the northern); and though the boundaries of the *läns* and the provinces do not quite correspond, the following may on the whole be stated as correct:

Svealand has six provinces: Uppland, Södermanland, Westmanland, Nerike, Vermland, and Dalecarlia (or Dalarne).

Görland has nine provinces: Östergötland, Westergötland, Dalsland, Småland, Gottland, Blekinge, Scania or Skåne, Halland, and Bohuslöv.

Norrland comprises Gestricksland, Helsingland, Medelpad, Angermanland, Jemtland, Herjedalen, and Westerbottn, together with Lapland.

Lapland, the most northern part of Sweden, bordering on Norway, has an area of about 40,000 English square miles, and, together with Norrland, forms more than one-half the whole area. This vast territory is, of all the Swedish provinces, the least adapted to agriculture, and is but sparsely populated.

In 1874, the population of Sweden was divided among the different *läns*, as follows:

NAMES.	POPULATION.	NAMES.	POPULATION.
The town of Stockholm, . . .	150,446	Län of Elfsborg, . . . . .	285,217
Län of Stockholm, . . . . .	134,620	" Skaraborg, . . . . .	250,257
" Uppsala, . . . . .	103,282	" Vermland, . . . . .	266,362
" Södermanland, . . . . .	139,216	" Örebro, . . . . .	177,084
" Östergötland, . . . . .	262,872	" Westmanland, . . . . .	121,018
" Jönköping, . . . . .	186,841	" Kopparberg, . . . . .	184,330
" Kronoberg, . . . . .	163,793	" Gefleborg, . . . . .	160,487
" Kalmar, . . . . .	238,399	" Westernorrland, . . . . .	147,212
" Gottland, . . . . .	54,499	" Jemtland, . . . . .	74,758
" Blekinje, . . . . .	130,921	" Westerbottn, . . . . .	96,607
" Kristianstad, . . . . .	228,498	" Norrbotten, . . . . .	81,987
" Malmöhus, . . . . .	330,115		
" Halland, . . . . .	130,802		
" Göteb, and Bohus, . . .	241,936		
		Total, . . . . .	4,311,559

The area is stated at 171,749 English square miles.

Sweden is generally less mountainous than Norway, and the highest mountains are found just on the border of that country. The boundary line itself is supposed to run along a mountain chain, which is called by geographers the Kôlen, though in reality there is no mountain of that name. The highest mountain in Sweden, Sulitelma (6315 Swedish feet above the level of the sea), lies in Lapland, and is the only alpine elevation in Sweden where, as far as is known, glaciers are found, but there are other mountains in these districts, and still further south along the frontier of the kingdom, in Jemtland and Herjedalen, with an elevation of from 4000 to 5000 feet, whose peaks are dotted with patches of snow the whole year round.

About eight per cent. of the area of Sweden is considered to lie upwards of 2000 feet above the level of the sea. Those parts which sometimes extend beyond the tree-line are exclusively in Norrland and Dalarna, and border upon Norway. The coast-line along the Gulf of Bothnia, and the whole of the central and southern parts of Sweden, lie, with few exceptions, lower than 800 feet above the level of the sea. Of the whole area of the kingdom, a third part does not lie 300 feet above the level of the sea, and it is within these lower lying districts that the most highly cultivated parts of the country are found, as well as the largest plains, such as the Uppland, the Ostgöta, the Westgöta, and the Skane plains. With the exception of these, the plains are neither numerous nor large, for, though there are extensive tracts of land which attain a height of only a few hundred feet above the level of the sea, these are generally intersected by numerous hills and valleys.

Sweden, next to Finland, is the best irrigated country in Europe, as her lakes and rivers cover an area of 14,428 English square miles, or 8.4 per cent. of her whole territory, while she has a sea coast of 1500 English miles. The water of the Swedish lakes, as well as that of the rivers, is generally clear and drinkable. Lake Wetter is especially known for its clear, but at the same time turbulent, body of water, as well as for its great depth—420 feet. Of the numerous rivers (or elfs) which flow into the Gulf of Bothnia, the Angerman elf is the best known, not only for its volume, but for its natural beauty. The Dal elf, which is usually considered as the dividing line between Norrland and the southern part of Sweden, empties further to the south. On the west coast flows the Göta elf, the outlet of Lake Wener, famed for the Trollhätta waterfall.

Almost every river or stream forms a foaming current or roaring cataracts, and there are thousands of them. Even the Trollhätta finds a rival in the Njommel-saska (Hare's Leap), in Lapland. One of the peculiarities of these lakes is that they are sometimes interrupted by an almost perpendicular fall—the water then spreading out, forming a second part of the lake. The nation possesses in these numerous falls an almost inexhaustible water power, which has not, as yet, been utilized to that extent which it might be. This character of the Swedish rivers carries with it, however, the disadvantage of rendering them innavigable, many of the rivers (the Dal elf, for instance) being barred at their very mouths by a fall; and, as a rule, they are navigable only for a mile or two, except for rafts and small boats, unless, as in the case of the Göta elf, they are provided with canals.

The climate of Sweden is mild in comparison to its high latitude, a fact which is attributed to the influence of the Gulf Stream. There are dense forests; and barley and rye mature in the province of Norrland, while its most southern part lies in the same latitude as the ice fields of Greenland, and its northern in that of barren Iceland. The country, extending through so many degrees of latitude, has a great variety of climate. The mean yearly temperature of the northern parts along the coast is 34° F., while that of the southern is 44° to 46° F. The mean yearly temperature of Stockholm is 41° F. The wells which serve as a measure of the earth's temperature, give about the same figures, the average temperature of a deep well in central Sweden being 43° F., while it is not unusual in Lapland to find a deep well covered with ice in midsummer, or a bog, 5 to 6 feet deep, frozen at its bottom; nevertheless,

the cereals and potatoes mature in these districts, for although the summer is short, it is very warm and clear. There can scarcely be said to be any night here during the summer, only a twilight, so that vegetation, even in this high latitude, receives the light and heat necessary for its ripening. The temperature of the southern parts is also subject to very great changes.

The farmers' worst enemy in Sweden is the frost, which in a single clear night, perhaps, after a warm summer day, will destroy his brightest prospects; but it is hoped that the increase of tillage, the draining of the bogs, and like causes, will at least mitigate its severity, if not altogether prevent it. Such severe frosts are very rare in the central and southern parts of Sweden.

(The greater portion of the foregoing was furnished by the Swedish commission.)

Mining is one of the most important departments of Swedish industry, and the working of the iron mines in particular is making constant progress by the introduction of new machinery. There were raised, in the year 1873, 19,458,339 hundredweight of iron ore from mines, besides 126,147 hundredweight from lake and bog. The pig iron produced amounted to 7,987,646 hundredweight, the cast goods to 501,350 hundredweight, the bar iron to 4,125,915 hundredweight, and the steel to 1,290,907 hundredweight. There were also raised, in the same year, 1660 pounds of silver, 26,152 hundredweight of copper, and 645,631 hundredweight of zinc ore. There are large veins of coal in various parts of Sweden, but no systematic working of them has as yet taken place.

The principal articles of cultivation are, in addition to the various cereals, potatoes, hemp, flax, tobacco, and hops, which are generally grown in sufficient quantities for home consumption. The forests are of great extent, covering nearly one-fourth of the whole surface, and, in some spots, rising to an elevation of 3000 feet above the level of the sea. The birch, fir, pine, and beech are of great importance, not only for the timber, tar, and pitch which they yield, but also for their supplying charcoal and firewood. The common fruit trees, as cherries, apples, and pears, grow as far north as 60°, but the fruit seldom comes to great perfection except in the southern provinces; cranberries and other berries abound in all parts of the country.

In 1870, there were in Sweden, 428,446 horses, 1,965,800 horned cattle, 1,780,000 sheep and goats, and 354,303 swine.

In 1873, there were 2549 factories, with a production valued at 146,869,000 crowns.\* Mines and mining establishments are not included in these figures. Ship building forms an extensive branch of industry.

According to the "Statesman's Year Book for 1876," the commercial navy of Sweden, at the end of 1873, numbered 1865 registered vessels for foreign trade, of a total burthen of 366,370 tons. The total imports, for the same year, were 271,440,000 riksdalers,† and the exports, 221,904,000.

Sweden is a constitutional monarchy, based on the fundamental law of 1809, by which it was decreed that the succession should be in the male line; that the sovereign should profess the Lutheran faith, and have sworn fidelity to the laws. The diet, which meets every year, and remains sitting for three or four months, is composed of two chambers, which are both elected by the people. The members of the first chamber serve for nine years, and those of the second for three. The diet exercises a strict control over the expenditure of the revenue, fixes the budget, and has power to take cognizance of the acts of the ministers and crown officers. The king's person is inviolable, and he can exercise a veto on the decrees of the diet. He is assisted by a Council of State, composed of ten members, who are responsible to the diet.

The budget estimates for 1875 place the receipts at 64,775,900, and the expenditures at 71,885,798 riksdalers. At the end of October, 1875, the public liabilities of the kingdom were 130,477,920 riksdalers.

\* The Swedish crown equals 26 8 cents.

† One riksdaler equals one crown.

The total strength of the armed forces of Sweden, at the end of September, 1875, was 132,775. The navy consists of 131 vessels, of 3183 horse-power, carrying 394 guns, and with crews aggregating 4693.

At the end of September, 1875, the total length of railways opened for traffic was 2237 English miles, of which 938 miles belonged to the State. All the telegraphs, with the exception of those of private railway companies, belong to the State. The total length of telegraph lines, at the end of 1874, was 4981 English miles; the total length of wires, 10,980 English miles. The total number of dispatches sent, in the year 1874, was 986,397.

The Swedish post office carried 16,711,100 letters in the year 1873. The number of post offices, at the end of the year, was 641.

Education is well advanced in Sweden. Public instruction is gratuitous and compulsory, and children not attending schools under the supervision of the government must furnish proofs of having been privately educated. In the year 1871 nearly 97 per cent. of all the children between eight and fifteen years visited the public schools.

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## NORWAY.

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NORWAY, the western portion of the Scandinavian peninsula, is situated between  $57^{\circ} 58'$  and  $71^{\circ} 10'$  north latitude, and between  $5^{\circ}$  and  $28^{\circ}$  east longitude. It is bounded to the east by Sweden and Russia, and on every other side is surrounded by water, having the Skagerrak to the south, the German Ocean to the west, and the Arctic Sea to the north. Its length is about 1100 miles, and its greatest width about 250 miles; but between the latitudes of  $67^{\circ}$  and  $68^{\circ}$  it measures little more than 25 miles in breadth. The area is given as 121,779 square miles, and the population as 1,800,000. Only 1.6 per cent. of the whole area can be cultivated; natural pastures occupy about 1.5 per cent.; forests, about 20.2 per cent.; mountains, glaciers, lakes, rivers, and land, etc., about 76.7 per cent. The whole of the Scandinavian peninsula consists of a connected mountain mass, which, in the southern and western parts of Norway, constitutes one continuous tract of rocky highlands, with steep declivities dipping into the sea, and only here and there broken by narrow tracts of arable land. South of Trondjem ( $63^{\circ}$  north latitude) the rocky ridge expands nearly the entire breadth of Norway. The northern portions of the range, known as the Kiöllen Fielle, occupy a space of about 25 miles in width, and form, as far north as  $69^{\circ}$ , the boundary line between Sweden and Norway. South of  $63^{\circ}$  north latitude the range of the Scandinavian mountains is known as the Norske, or Dovre Fielle, although the latter name belongs properly only to the part immediately in contact with the Kiöllen. This range, about 360 miles in length, attains its greatest elevation at the Sogne Fjord, where it is known as the Hurrungerne. Here the highest summits are 8000 and 8400 feet above the sea, while the contiguous snowfields of Justedal, the largest in Europe, and covering an area of 600 square miles, have probably an elevation of nearly 7000 feet. From these and other vast snowfields, averaging more than 10 miles in width, vast glaciers descend to within 2000 feet above the sea, where they often terminate in deep lakes, some of which are very extensive. The upper valleys of this range, although generally too high for cultivation, contain the best timber that is exported from Norway, and afford good pasturage in the height of the summer, when the flocks and herds are driven thither from the lowlands near the entrance of the fjords. The general elevation of the Norske Fielle does not rise above the line of perpetual snow, whose average height in these latitudes is 5000 feet, but it ranges above that of the growth of trees, which may be stated to lie 1000 feet lower. The most northern part of the Norske Fielle, which is known as the Dovrefield, and includes Sneehätten, nearly 7500 feet above the sea, presents a broken surface, rent with ravines and narrow valleys, which admit of cultivation, but are difficult of access from the configuration of the land around them.

The Scandinavian range consists principally of primitive and transition rock, and exhibits almost everywhere the effect of glacial action, the glaciers and moraines presenting the same appearances as in the Swiss alpine district. The numerous islands which skirt the coast of Norway, and must be regarded as portions of the range, present the same characters as the continental mass. Some of these, as the islands of Alsten and Dunnoe, rise perpendicularly from the sea with peaks penetrating beyond the snowline, which lies here at an elevation of 4000 feet. Norway abounds in lakes and streams; according to some topographers, there are upwards of 30,000 of the

former, of which the majority are small, while none have an area exceeding 400 square miles. The chief rivers of Norway are the Glommen, Lougen, Louven, Drammen, Otter, and Wormen. The first of these has a course of 400 miles, but the majority of the Norwegian streams, all of which rise at great elevations, have a comparatively short course, and are unfit for navigation, although they are extensively used to float down timber to the fjords, whence the wood is exported in native ships to foreign ports. These fjords, or inlets of the sea, which form so characteristic a feature of Norwegian scenery, and give with their various sinuosities a coast-line of upwards of 8000 miles, form the outlet to numerous rapid streams and waterfalls, which leap or trickle down the edges of the treeless fields or mountain flats above.

The peculiar physical character of Norway necessarily gives rise to great varieties of climate in different parts of the country. The influence of the sea and of the Gulf Stream, and the penetration into the interior of deep inlets, greatly modify the severity of the climate on the western shores, and render it far superior to that of the other Scandinavian countries in the same latitude. In Norway proper, the winters, as a rule, are long and cold, and the summers, which rapidly follow the melting of the snows in April and May, are warm and pleasant. On the islands, however, the heats of summer are often insufficient to ripen corn.

Norway had, in 1875, 150,000 horses, 950,000 oxen and cows, 1,710,000 sheep and goats, 110,000 pigs, and 102,000 reindeer. The value of the annual product is about \$25,000,000.

The principal cereals cultivated in Norway are oats, barley, corn, rye, and wheat; the yearly produce is about 11,160,000 bushels, besides 14,100,000 bushels of potatoes. The value of the harvest amounts to about \$16,000,000 per annum.

The products of agriculture and cattle-breeding being insufficient to supply the wants of the country, considerable quantities are imported.

Forestry is of great importance. As stated above, the forests of Norway cover more than one-fifth of its entire area. They supply considerable quantities of timber, both for home consumption and exportation. The average annual exports of timber amount to about \$16,000,000.

The fisheries of Norway employ about 27,000 men, and yield about \$16,000,000 per annum. They are of great importance, and not only yield one of the most important articles of home consumption, but at the same time constitute one of the most profitable sources of foreign export. Fish are caught in almost every stream and lake of the interior, as well as in the fjords of the coast, and in the bays and channels which encircle the numerous islands skirting the long sea-line of Norway. These fish are principally cod and herring. Cod, prepared as stock-fish or dried salt fish, is exported to Spain and Italy; herring to the Baltic ports.

The merchant marine of Norway had, in 1875, a tonnage of 1,220,000, and was manned by 53,000 seamen.

The following statistics apply to the exports and imports of Norway in 1873:

Value of goods exported, . . . . .	\$33,000,000	
Gross freight of goods carried in Norwegian vessels, . . . . .	28,400,000	
Receipts from various sources, . . . . .	800,000	
		\$62,200,000
Value of goods imported, . . . . .	\$45,800,000	
Expenses of Norwegian vessels in foreign countries, . . . . .	11,400,000	
Other expenses, . . . . .	2,400,000	
		59,600,000
Balance, . . . . .		\$2,600,000

The principal articles of export were, in 1873: Products of the fisheries, \$11,600,000; of forestry, \$15,500,000; of agriculture and cattle-breeding, \$1,300,000; metals and minerals, \$1,800,000; textile fabrics, \$660,000.

The imports were principally: Articles of food, \$13,500,000; coffee, \$3,500,000; liquors, \$1,000,000; textile fabrics and dry goods, \$8,300,000; hardware, \$3,300,000; hides, \$1,200,000; coal, \$1,700,000; vessels, \$4,400,000.

Manufactures have made some progress during the last few years, but are, as yet, inconsiderable. About 32,000 persons are employed, mainly in sawmills, planing mills, brick factories, shipbuilding, and metallurgical and textile industries.

The mineral products comprise silver, copper, cobalt, iron, chrome, ironstone, etc., and yield an annual income of nearly \$1,000,000.

Education is compulsory, parents being bound to let their children, between the ages of seven and fourteen, receive public instruction; 241,000 children attend the common schools, and 16,500 receive a higher instruction. The expenses of the higher schools were, in 1873, \$827,000.

The public revenue, in 1873, was \$6,870,000, and the expenditures \$7,277,000, of which amount \$865,000 was for the construction of railways. The public debt amounts to \$9,200,000.

Norway has 12,432 miles of highways and district roads, 304 miles of railways, and 147 miles of canals. There are 719 post offices, which distribute 7,500,000 letters per annum.

(The foregoing statistics are furnished by the Norwegian Commission.)

According to "Martin's Year Book," there were, at the end of 1873, telegraph lines of the length of 3745 miles, and wires of the length of 5845 miles.

The government of Norway is a constitutional monarchy. The executive is represented by the king, who exercises his authority through a Council of State, composed of one minister of state and nine councillors. The legislative power of the realm is the Storting, or Great Court, the representative of the sovereign people.

On the 1st of January, 1874, the troops of the land numbered 13,000 men. The reserve forces at the same time numbered 19,000, and the landwaern 11,000 men. The naval force comprised, at the same date, twenty vessels, all steamers, with an armament of 149 guns.

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#### Commission from NORWAY to the International Exhibition:

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# ITALY.

THE geographical territory comprised under the name of Italy consists of a considerable stretch of peninsular mainland, besides several islands, situated in Southern Europe, between latitude  $36^{\circ} 35'$  and  $47^{\circ}$  north, and between longitude  $6^{\circ} 35'$  and  $18^{\circ} 35'$  east. From the southern extremity of Sicily to the Alps its maximum length is about 600 miles, its utmost breadth being 300 miles. Its boundaries on the north are Austria and Switzerland, on the south the Mediterranean, on the west France and the Mediterranean, and on the east the Ionian and Adriatic seas, while its natural limits are strongly defined by the Alps and the sea.

The first general census of the kingdom of Italy was taken by the government on the 31st of December, 1871, on which date the population numbered 26,796,073 souls, living on an area of 296,013 square chilos, or 112,677 English square miles. The density of population was 237 per English square mile.

The kingdom of Italy is administratively divided in 69 provinces, as follows:

PIEDMONT AND LIGURIA.		POPULATION.
1. Alessandria, . . . . .	683,361	
2. Cuneo, . . . . .	617,232	
3. Genoa, . . . . .	716,284	
4. Novara, . . . . .	624,969	
5. Porto Maurizio, . . . . .	127,042	
6. Turin, . . . . .	972,988	
		<hr/>
		3,741,876
ISLAND OF SARDINIA.		
7. Cagliari, . . . . .	392,981	
8. Sassari, . . . . .	243,274	
		<hr/>
		636,255
LOMBARDY.		
9. Bergamo, . . . . .	368,152	
10. Brescia, . . . . .	456,023	
11. Como, . . . . .	477,642	
12. Cremona, . . . . .	300,595	
13. Milan, . . . . .	1,009,794	
14. Pavia, . . . . .	448,357	
15. Sondrio, . . . . .	111,240	
		<hr/>
		3,171,803
EMILIA.		
16. Bologna, . . . . .	439,232	
17. Ferrara, . . . . .	216,545	
18. Forli, . . . . .	234,090	
19. Massac Carrare, . . . . .	161,944	
20. Modena, . . . . .	273,231	
21. Parma, . . . . .	264,509	
22. Piacenza, . . . . .	225,775	
23. Ravenna, . . . . .	220,801	
24. Reggio, . . . . .	240,635	
		<hr/>
		2,276,762



		POPULATION.
<b>THE MARCHES.</b>		
25. Ancona, . . . . .	262,369	
26. Ascoli Piceno, . . . . .	203,008	
27. Macerata, . . . . .	236,994	
28. Pesaro e Urbino, . . . . .	213,072	
		<hr/>
		915,443
<b>UMBRIA.</b>		
29. Perugia, . . . . .		549,833
<b>TUSCANY.</b>		
31. Arezzo, . . . . .	234,645	
31. Florence, . . . . .	766,611	
32. Grosseto, . . . . .	107,457	
33. Leghorn, . . . . .	118,851	
34. Lucca, . . . . .	280,399	
35. Pisa, . . . . .	265,959	
36. Sienna, . . . . .	206,446	
		<hr/>
		1,980,368
<b>NEAPOLITAN PROVINCES.</b>		
37. Aquila, . . . . .	332,782	
38. Avellino, . . . . .	375,237	
39. Bari, . . . . .	604,540	
40. Benevento, . . . . .	232,012	
41. Campobasso, . . . . .	364,843	
42. Caserta, . . . . .	695,754	
43. Catanzaro, . . . . .	412,226	
44. Chieti, . . . . .	340,299	
45. Cosenza, . . . . .	440,272	
46. Foggia, . . . . .	322,754	
47. Lecce, . . . . .	493,574	
48. Naples, . . . . .	908,029	
49. Potenza, . . . . .	509,202	
50. Reggio, . . . . .	353,606	
51. Salerno, . . . . .	541,739	
52. Teramo, . . . . .	245,684	
		<hr/>
		7,171,553
<b>SICILY.</b>		
53. Caltanissetta, . . . . .	230,066	
54. Catania, . . . . .	495,240	
55. Girgenti, . . . . .	289,018	
56. Messina, . . . . .	420,649	
57. Palermo, . . . . .	617,660	
58. Siracusa, . . . . .	294,915	
59. Trapani, . . . . .	236,388	
		<hr/>
		2,583,936
<b>VENETIA.</b>		
60. Belluno, . . . . .	175,370	
61. Mantua, . . . . .	288,942	
62. Padua, . . . . .	364,355	
63. Rovigo, . . . . .	200,835	
64. Treviso, . . . . .	352,538	
65. Udine, . . . . .	481,787	
66. Venezia, . . . . .	337,539	
67. Verona, . . . . .	367,426	
68. Vicenza, . . . . .	363,161	
		<hr/>
		2,931,953
69. ROME, . . . . .		836,291

According to the old political division, the population is divided as follows:

Piedmont and Liguria, . . . . .	3,741,876
Island of Sardinia, . . . . .	636,255
Lombardy, . . . . .	3,171,803
Emilia, . . . . .	2,276,762
The Marches, . . . . .	915,443
Umbria, . . . . .	549,833
Tuscany, . . . . .	1,980,368
Neapolitan Provinces, . . . . .	7,171,553
Sicily, . . . . .	2,583,936
Venice, . . . . .	2,931,953
Rome (States of the Church), . . . . .	836,291
	<hr/> 26,796,073

The physical aspect presented by the surface of Italy is diversified in the extreme. Northern Italy is, for the most part, composed of one great plain—the basin of the Po, comprising all Lombardy and a considerable portion of Piedmont and Venice, bounded on the northwest and partly on the south by different alpine ranges. Throughout Central Italy, the great Apennine chain gives a picturesque irregularity to the physical configuration of the country, which in the southern extremity of Italy assumes still wilder forms. In the highland districts of Naples in which the Apennine ridge reaches its maximum elevation (10,000 feet), the scenery exhibits a savage grandeur. Along the extensive coast plains, as well as in the sub-Apennine valleys, the rural charms of this portion of Italy are extreme, while the brilliant flora and vegetation impart to it a novel character of beauty. The chief mountain system of Italy is the frontier ridge of the Alps, and their noble continuation, the Apennines.

Italy likewise comprises a considerable stretch of volcanic zone, which traverses the peninsula from the centre to the south in a line parallel with that of the Apennines, and of which the most remarkable active summits are Vesuvius, adjoining Naples, *Ætna* in Sicily, and Stromboli in the Lipari Isles.

The great plains of Italy are those of Lombardy, which stretch from the Mincio to the Ticino and the Po; of Piedmont; the Venetian plains; the plain of the Roman legations; the plain of the Campo Felice, on which stands Vesuvius; the Apulian plain; the long, narrow Neapolitan plain of the Basilicata, 100 miles in length, and 24 miles in breadth, stretching along the Gulf of Tarento.

The great majority of the rivers of Italy are only navigable for small coasting boats or barges. By far the most important is the Po, which rises on the borders of France, and flows into the Adriatic. It has numerous tributaries. Among the others may be mentioned the Adige, Brenta, Piave, Tagliamento, Aterno, Sangro, Metauro, Ofanto, Bradano, also belonging to the Adriatic basin; the Arno, the Tiber, the Ombrone, the Garigliano, and the Volturno, which belong to the Mediterranean basin.

The canal system of Italy is most extensive in the north. Nine principal canals in Lombardy administer to the irrigation of the plains and to the purposes of commercial communication, contributing in no small degree to the prosperity of the district. The Naviglio Grande or Ticinello is the finest hydraulic construction in Italy; it communicates between the Ticino and Milan, and has a course of 28 miles, navigable for vessels of large size. It was begun in 1179. The Naviglio Martesana, 38 miles long, unites Concesa on the Adea with Milan; the Naviglio di Pavia is 18 miles in length; the bifurcated Naviglio d'Ostiglia unites the Po with the Adige. 253 canals intersect Piedmont, extending over a length of 1932 kilometres. Venice comprises 203 navigable, and 40 minor canals. Numerous canals have been constructed for the drainage of the Pontine Marshes. This system of water communication was early carried to a high degree of efficiency in Italy, and is of incalculable service in the agricultural districts. Digitized by Google

The mountain lakes of Italy are famed for their picturesque beauty. They are mostly in the northern provinces of Lombardy and Venetia. The principal are Maggiore, Lugano, Como, Iseo, and Garda. The Roman lakes of Perugia, Bolseno, and Bracciano, that of Castiglione in Tuscany, and Celano in Naples, also deserve mention.

The mineral and thermal springs of Italy are innumerable, and possess a great variety of curative and sanitary properties.

In the northern provinces, the climate is temperate, salubrious, and frequently severe in winter; in the centre, it assumes a more genial and sunny character: while the heat of the southern extremity is almost of a tropical intensity. The singular clearness of the atmosphere sets off the landscape and monumental beauties of Italy with brilliant effect. The drawbacks of Italy's climate are the piercing tramontana or mountain winds; the deadly sirocco, which blights all nature at seasons along the western coast; and the malaria or noxious miasmata which issues from the Maremma of Tuscany, the Pontine Marshes, and the Venetian lagoons, generating pestilential fevers and aguish diseases in the summer season. The mean temperature of the leading divisions of the country throughout a whole year was as follows: Milan,  $55^{\circ} 4'$  of Fahrenheit's scale; Rome,  $59^{\circ}$ ; Palermo,  $62^{\circ} 5'$ ; and in Sardinia,  $60^{\circ} 5'$ . The highest temperature at Rome rises to  $95^{\circ}$ , and in Sicily from  $97^{\circ}$  to  $104^{\circ}$ .

The staple products of Italy are corn, wine, oil, raw silk, rice, olives, and fruits. Hemp, flax, and cotton are also largely grown. The sugar-cane is successfully cultivated in the two Sicilies. Agriculture, except in the north, is in a very backward condition. It is calculated that only two-thirds of the area of the kingdom capable of production are cultivated, and that the rest lies waste. The superficial extent of the productive soil of Italy is 23,017,096 *ellaras*,\* divided thus:

	ELLARAS.
Arable land, . . . . .	11,003,061
Meadow land, . . . . .	1,173,436
Rice ground, . . . . .	144,903
Olive plantations, . . . . .	554,767
Chestnut plantations, . . . . .	585,132
Woods and forests, . . . . .	4,158,349
Pastures, . . . . .	5,397,448
Total, . . . . .	23,017,096

There are, besides, 3,997,059 *ellaras* of rock and marsh. Of the land capable of cultivation, more than half is devoted to the growth of cereals, mainly wheat. The average crop is insufficient for the supply of the country. The wines of Naples are esteemed the best, small quantities of the famous *Lachrima Christi* and the *Vind d'Atti* being exported, while the Sicilian wines of Marsala form a considerable item of export. The best oil and olives are furnished by Tuscany, Lucca, and Naples. Silk is chiefly manufactured in the northern provinces, the cultivation of the mulberry and the rearing of the silkworm forming, in Lombardy, a most important interest. The best manufactured silk comes from Piedmont, Tuscany, and the Roman provinces. The fruits of the two Sicilies are exquisite in flavor, and embrace several tropical species. Oranges, lemons, almonds, figs, dates, melons, and the pistachio nut, are common to all orchards, and are largely exported. A considerable cheese trade exists in the northern provinces.

The sea and fresh water fisheries of Italy are considerable, the Mediterranean furnishing immense quantities of tunny, anchovies, sardines, mullets, pelchards, and mackerel. The export of anchovies and of sardines is of immense extent. The

\* One *ellara* equals 2.47 acres.

river fisheries yield salmon, trout, sturgeon, lampreys, tench, barbel, etc. The crustaceans and shell fish of the Italian seas are of great variety and delicate flavor, and are a favorite article of Italian consumption.

The total exports of the kingdom, during the year 1874, were 1,304,994,328 lire;\* the imports, during the same year, 985,458,532 lire.

The number and tonnage of merchant vessels belonging to the kingdom, on January 1st, 1874, were as follows: 17,562 sailing vessels, aggregating 925,337 tons burthen; and 103 steamers, of a total burthen of 24,476 tons. Of the sailing vessels, 9074 were under 6 tons each.

According to the present constitution of Italy, the executive power belongs exclusively to the sovereign, and is exercised by him through responsible ministers. The legislative authority vests conjointly in the king and parliament, the latter consisting of two chambers, a Senate and a Chamber of Deputies. The Senate is composed of the princes of the royal house who are of age, and of an unlimited number of members, above forty years old, who are nominated by the king for life; a condition of the nomination being that the person should either fill a high office, or have acquired fame in science, literature, or any other pursuit tending to the benefit of the nation: or, finally, should pay taxes to the annual amount of 3000 lire. The members of the Chamber of Deputies are elected by a majority of all citizens who are twenty-five years of age and pay taxes to the amount of 40 lire. A deputy must be thirty years old, and must have the requisites demanded by the electoral law, among them a slight property qualification. Neither senators nor deputies receive any salary.

The following are the budget estimates for 1875:

Estimated revenue, . . . . . 1,344,164,158 lire.

Estimated expenditures, . . . . . 1,575,487,190 "

The entire public debt, at the end of 1873, was 9,757,613,267 lire.

The actual strength of the army, at the end of December, 1873, was:

Number of men under arms (peace footing), . . . . . 199,557

Number of men on unlimited furlough, . . . . . 244,952

Total (war footing), . . . . . 444,509

The navy, at the commencement of 1875, consisted of 95 ships of war, carrying 1256 guns. Of these, 9 were ironclads, carrying 346 guns, 46 were screw steamers, carrying 693 guns, and 32 paddle steamers, carrying 113 guns.

The total length of railways opened for traffic, at the end of 1874, was 4607 English miles.

The number of post offices at the commencement of 1874 was 2709. In the year 1873 the post office carried 504,402,431 letters and 94,402,596 printed parcels.

The length of telegraphic lines, on the 1st of January, 1874, was 12,622 English miles, nearly two-thirds of the whole belonging to the government. There were, at the same date, 1408 telegraphic offices. The number of private telegrams during 1873 was 4,670,090, and of official telegrams, 163,852.

Under the new Italian government, a great part of the property confiscated from the monastic establishments has been devoted to the cause of public education. In addition to this, the Parliament votes an annual credit of 15,000,000 lire for the same purpose. Since the commencement of the year 1860 there were opened throughout the kingdom thirty-three model schools. Notwithstanding these important aids to instruction, education still stands very low. According to the census of 1864, out of a total population of 21,703,710 souls, there were about 17,000,000 who could neither read nor write. Piedmont occupied the first place, Sicily the last, on the register of knowledge. In the Basilicata, Calabria, and Sicily, more than nine-tenths of the population could neither read nor write.

\* One lire equals 19.3 cents gold.

There are twenty-two universities in Italy, many of them of ancient foundation. By a decree of the Minister of Public Instruction, issued in 1871, six high-schools—Naples, Pavia, Turin, Bologna, Florence, and Parma—were declared first-class universities of the kingdom. The number of students at all the universities was returned as 10,524 in 1871.

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## EGYPT.

THE territories under the rule of the sovereign of Egypt, including those on the Upper Nile and Central Africa, are vaguely estimated to embrace an area of 4,777,830 square kilometres, and to be inhabited by a population of 16,952,000, of whom about one-third are in Egypt proper. The following tabular statement gives the area and population of the various divisions of the kingdom, and its recent annexation, according to government estimate, of the year 1875:

DIVISIONS.	AREA, SQ. KILOMETRES.	POPULATION.
Egypt proper, . . . . .	550,630	5,252,000
Nubia, . . . . .	864,500	1,000,000
Former kingdom of Ethiopia, . . . . .	2,918,000	5,000,000
Darfur, and other annexed territories, . . . . .	444,700	5,700,000
	4,777,830	16,952,000

The great physical peculiarity of Egypt is the absence of rain, the land being only irrigated by the annual overflow of the Nile. The climate is remarkably mild and sound, especially south of the Delta; and in the desert, from Cairo to Alexandria, the air contains more moisture than to the south. From the middle of August to December, west winds prevail; east winds from that time till March; after that unhealthy south winds or Khamsin till June; and from June till August the north or Etesian winds. Earthquakes are occasionally felt, and the temperature varies from 84° F. to 32°. The most remarkable phenomenon is, however, the regular increase of the Nile, fed by the fall of the tropical rains, which commence in 11° north latitude, in the spring; and falling first into the White, and then Blue Nile, reach Egypt in the middle, and the Delta in the end of June. In the middle of July, the red water appears, and the rise may be dated from that time—it attains its maximum at the end of September, and begins to decline visibly in the middle of October, and subsides to its minimum in April. At the end of November, the irrigated land has dried, and is sown, and is covered with green crops, which last till the end of February. In March is the harvest. The state of the Nile, in fact, marks the season more accurately than the variation of temperature. Egypt is by no means remarkably healthy, as, in addition to the visitations of plague and cholera, ophthalmia, diarrhoea, dysentery, and boils often prevail, and European, and even Negro races cannot be acclimatized.

Many of the European trees and plants are found in Egypt; the date-palm, the doom-palm, the sycamore, acacias, tamarisks, etc., are among its more peculiar botanical productions. The extensive culture of papyrus has been, in modern times, replaced by that of the sugar-cane, cotton, indigo, and tobacco, and the plant has almost disappeared. Gourds and melons have always abounded. The wheat and barley of antiquity have been added maize and durra. Egypt is very deficient in timber trees. The rocks of Egypt afforded the stones used in its edifices and sculptures; granite, syenite, breccia (in the Cossier Road), porphyry (from the quarries of Gebel Dokhan, opened in the reign of the Emperor Claudius).

sandstone, and limestone. Alabaster (found at Middle Egypt) has been used from the earliest periods to the present day. Emeralds are produced by the mines of Gebel Zabara; salt, natron, and—since 1850—sulphur, are among the other mineral productions of Egypt.

Egypt proper is divided into three great districts, namely: Masr-el-Bahri, or Lower Egypt; El-Wustani, or Middle Egypt; and El-Said, or Upper Egypt—designations drawn from the course of the river Nile. These three geographical districts, subdivided into eleven administrative provinces, had, according to an enumeration made by the government in March, 1872, a rural population of 4,603,660, and an urban population of 648,340, dispersed over six towns, as follows:

Cairo, . . . . .	349,983	Tanta, . . . . .	28,500
Alexandria, . . . . .	212,054	Rosetta, . . . . .	15,000
Damietta, . . . . .	29,383	Suez, . . . . .	13,498

The Khedive is absolute sovereign or king. The administration is carried on by a Council of State of four military and four civil dignitaries.

The revenue of Egypt for the financial year ending September 10th, 1874, was calculated in the official budget at 1,982,394 purses;\* the expenditures at 1,763,128 purses.

The public debt of Egypt consists chiefly of foreign loans. These are divided into two classes, namely, general loans, contracted by the State, and loans of the Khedive, as greatest of land-owners, raised on his individual responsibility.

The following table shows the actual state of the debt:

Funded debt, . . . . .	£49,270,380
Floating debt, . . . . .	7,600,000
	£56,870,380
Personal debt of the Khedive, . . . . .	13,174,360
Total, . . . . .	£70,044,740

The army is raised by conscription. It consisted, in January, 1875, of four regiments of infantry, of 3000 men each; of a battalion of chasseurs, of 1000 men; of 3500 cavalry, 1500 artillery, and two battalions of engineers, of 1500 each. There are, besides, two regiments of black troops, of Sudan, numbering 5000 men.

The Egyptian navy comprised, in 1875, 7 ships of the line, 6 frigates, 9 corvettes, 7 brigs, 18 gunboats and smaller vessels, and 27 transports.

The commerce of Egypt is very large, but consists, to some extent, of goods carried in transit. The total exports for the year 1873 amounted to about 1,450,000,000 piastres the imports to about 600,000,000 piastres. The merchant navy, in 1872, comprised 585 vessels of a total burthen of 59,874 tons.

The commerce of the world has been greatly benefited by the Suez Canal, which connects the Mediterranean with the Red Sea. Starting from Port Said, forty miles east of the Damietta mouth of the Nile, it proceeds across the isthmus and through lakes Menzaleh, El Ballah, and Timsah, on the shores of which latter stands the new town of Ismailia, and through the Bitter lakes to Suez. Its total length is 92 miles. Its actual width over the greater part of its length, does not permit of two vessels passing or crossing each other in the canal itself; but there are numerous sidings, by which vessels are enabled to cross one another; vessels measuring 430 feet in length and drawing 25 feet 9 inches of water have passed safely through the canal. Its actual cost, according to the report for the year 1875, was £17,518,729, exclusive of £1,360,000 bonds issued to pay for coupons on shares in arrear during part of the period of construction.

The number and tonnage of vessels which passed through the canal in each of the five years, 1870 to 1874, were as follows:

YEAR.	VESSELS.	TONNAGE.
1870, . . . . .	491	436,618
1871, . . . . .	761	761,875
1872, . . . . .	1082	1,439,169
1873, . . . . .	1171	2,085,270
1874, . . . . .	1264	2,423,672

Egypt had, on the 1st of January, 1875, a railway system of a total length of 955 English miles, open for traffic, with 502 miles under construction. With the exception of a short line of about 5 miles, all of the Egyptian railways are State property.

The telegraphs of Egypt were, at the commencement of 1875, of a total length of 4094 miles, the length of wires being 2690 miles. The whole of the telegraphs are State property.

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# TUNIS.

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TUNIS, a country of Africa, and one of the Barbary States, is bounded on the north by the Mediterranean, on the west by Algeria, on the south by the Desert, and on the east by Tripoli and the Mediterranean. Its greatest length from north to south is about 440 miles; its average breadth, 160; area, upwards of 75,000 square m.les; population, according to latest authorities, 1,200,000. Tunis is traversed by branches of the great Atlas range, which, in fact, has its proper termination here. The northern coast is rocky and steep, with numerous bays, of which the largest is the Gulf of Tunis; and two of its promontories, Capes Blanco (Ras-el-Abid) and Bon, are the most northern in Africa. The eastern coast, on the other hand, is flat, sandy, and infertile, like that of Tripoli, but has two large gulfs, Hammamet and Cables. The southern part of Tunis belongs to the desert steppe known as Belud-el-Jerid. There is only one fresh water lake of any consequence, that of Biserta or Bensart, near the north coast. The brooks and torrents of Tunis either lose themselves in the sand, or find their way to the sea after a short course. None are navigable. The longest is the Mejerdah, which flows in a generally northeastern direction into the Gulf of Tunis. Other streams are the Ved-el-Millanah and the Ved-el-Kebir. There are several mineral springs in the country. The climate of Tunis is fine, and the soil exceedingly fertile, so that, in spite of a very poor knowledge of agriculture, wheat, barley, maize, dhurra, pulse, olives, oranges, figs, grapes, pomegranates, almonds, and dates are abundantly produced. The culture of oil is more attended to, and is very lucrative. Great herds of cattle are fed on the plains; the sheep are famous for their wool; and the horses and dromedaries are no less celebrated. The chief mineral products are sea-salt, saltpetre, lead ore, and quicksilver. In the vicinity of the sea-coasts, considerable manufacturing and trading industry is manifested, more particularly in the cities of Tunis and Susa. Wool, olive oil, wax, honey, soap, hides, coral, sponges, dates, wheat, and barley are the principal exports. Cloth, leather, silks, muslins, spices, cochineal, and arms are transported by means of caravans to the interior of Africa, whence in exchange are brought for exportation to European and other countries, senna, gums, ostrich feathers, gold, and ivory. Total exports in 1874, valued at 28,815,358 francs; imports, 25,193,785 francs. During the same year the entries at the port of Tunis (Goulette) were 779 vessels, 116,927 tons burthen; departures, 768, of 108,031 tons burthen.

The Bey of Tunis receives his investiture from Constantinople; without the Sultan's authority he can neither declare war, conclude peace, nor cede territory; the Sultan's name must appear on all the coinage; the army must be at the disposal of the Sublime Porte. In internal matters the power of the Bey remains absolute.

The Tunisian army comprises about 4000 regulars, 5000 Karouglis (descendants of the Turkish janissaries), 5000 Zouaves (infantry), and 1500 spahis (cavalry). In time of war the irregular cavalry can be increased to about 3000. The navy consists of two vessels, carrying 10 guns, and crews aggregating 250 men. The merchant navy comprises 300 vessels, ranging from 10 to 150 tons burthen.

There are about forty miles of railways in operation. There is at Tunis, a French, and also an Italian post office.

French telegraph lines connect the city of Tunis with various towns within the borders of the regency, as well as with Algiers and Europe.

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Commission from TUNIS to the International Exhibition:

HIS EXCELLENCY SIDI HEUSSEIN, General of Division, Minister of Instruction and Public Works, President.

G. H. HEAP, U. S. Consul, Resident Commissioner.

## ORANGE FREE STATE.

THE republic of the Orange Free State is situated on the northeast boundary of Cape Colony, and is bounded as follows: On the west and northwest by the territory claimed for the chief, Nicholas Waterboer, under the name of Griqualand West, and by Betchuanaland, respectively, on the north and northeast by the Transvaal republic, on the east by the colony of Natal, and on the south by British Basutoland, the Native Reserve Lands, and the Cape Colonial divisions of Albert and Colesberg.

Its area is roughly taken to be about 70,000 square miles, but no accurate computation has hitherto been made, and the probability is that the actual extent will be found considerably greater.

The country consists of extensive undulating plains, which slope from the great Watershed, northward and westward, respectively, to the Vaal and Orange rivers, and is intersected at varying intervals by the Wilge, Rhenoster, Valsch, Vet, and Riet rivers, all of which empty their waters into the Vaal river, and the Caledon river, which empties into the Orange river. The courses of the large rivers are extremely tortuous and hollow, their banks being for the greater part very precipitous, and generally lined with water-willow, mimosa, and other trees indigenous to this country. The streams are usually fordable; during the rainy season, however, they become swollen and impassable.

The Orange Free State is, for the greater part, a grazing country, and though agriculture is everywhere attended to on a larger or smaller scale, according to the natural capabilities of the farms, still it is chiefly in the southern and eastern districts that it is carried on as the principal source of production, and it is almost exclusively from the districts of Rouxville, Lady Brand, Winburg, Bethlehem, and Harrismith, that grain is brought into the markets of the other districts.

Neither is it altogether without mineral wealth, as diamonds, rubies, and other precious stones have been discovered in various parts of the country. Coal also of a very good quality, and in paying quantities, has been found in the Winburg district, as well as on farms in the Lady Brand and Harrismith districts.

In the early days of this republic the distribution of animal life was a subject of great interest, from the fact of the immense variety of wild animals inhabiting the country. Even now the lion still frequents some sections of it. But, owing to the advance of civilization and human industry, all the larger animals, as the elephant, rhinoceros, hippopotamus, and giraffe, have retreated far away. Upon its vast undulating plains, however, a large and splendid variety of the antelope tribe roams in countless numbers. The country being favorable for the rearing of horses, cattle, and woolled sheep, the number of the latter contained therein may be estimated by millions.

Birds abound in great variety, particularly those of the larger kinds, among which might be enumerated the ostrich, eagle, vulture, pelican, hawk, and various species of crane.

The staple articles of export from the Orange Free State are wool and skins, and of late years diamonds and other precious stones, while owing to the mining population in the disputed territories along the Vaal river, a large trade in grain and other agricultural produce has been productive of great wealth to the country.

From the same cause, although more indirectly, trade in all articles of import, such as ironware implements, and manufactures in woolen, cotton, and silk goods, and articles for consumption, either as necessities or luxuries, has received a great stimulus, and the commercial community is to all appearance in a healthy and prosperous condition.

The average height of the Orange Free State above the level of the sea is about 5000 feet, and the climate is generally salubrious. The winter here is cold but dry, the summer usually warm and moist, though droughts are sometimes experienced in the summer months. The air, however, is healthy and dry, as a rule, and this is particularly felt at Bloemfontein and its vicinity; consequently numbers of invalids suffering from pulmonary affections resort to Bloemfontein, and experience much benefit from a residence in this part of the country.

In other respects it has been noticed that the changes of the seasons are to a greater or less degree, according to their duration, accompanied by a greater liability to colds and fevers, generally of a typhoid type, and inflammatory affections, especially amongst children.

The government of the Orange Free State is republican, and its constitution vests the legislative powers in the Volksraad, the members of which are elected by their constituents for four consecutive years. The whole number of representatives (there being one for each chief town of a district, and one for each field cornetcy) is fifty-two. Of this number, the half retire by rotation every two years, and a new election takes place to fill up the vacancies.

The educational department of the country is only now receiving that vital attention which a subject of so vast importance to any country ought to have; and the legislature has only of late years been impressed with the absolute necessity of placing this department on the best possible footing. Accordingly, a fund is gradually being raised for educational purposes, which in 1876 will place at the disposal of the government an amount of £56,000.

Meantime, in accordance with an order made in 1872, an inspector of education has been appointed, who has already entered upon the task of remodeling the whole educational system. It is only right, nevertheless, to state that a government allowance of £90 a year has for years past been given to each district town, on condition of its subscribing at least one-half more, and attempts to establish good schools have everywhere been made by the district school committees, comprising the Landdrost, Dutch Reformed Church, and three elected members, with varying success in some places, but in others only to meet with failure, which is principally to be attributed to the defective system hitherto pursued.

The principal support hitherto afforded by the government consists in the liberal allowances made for the salaries of teachers in the Grey College; but owing to the short time that has elapsed since the arrival of one of them, and various other circumstances beyond the control of the government, the desired results are still to be looked for. Very praiseworthy efforts have also been made on behalf of education by the Anglican Church, in schools established at Bloemfontein and at Smithfield, and this latter has already shown very satisfactory results.

The revenue of the State, for the year 1874-75, was £190,958; the expenditure, during the same year, £98,242.

The government lands of the Orange Free State are still very considerable, though as nought compared with their original size, owing to the sales of farms which have been held from time to time. The value of fixed property of all kinds has increased greatly within the last few years. Even in the districts of Harrismith and Kroonstad, where land formerly was almost valueless, farms are now eagerly sought after, and change hands at very high rates. The average price of land throughout the whole State may now be fixed at 10s. per morgen. A rough estimate fixes the number of farms throughout the country as between 6000 and 7000. Fixed property changes ownership by registration. The population of the State is estimated at about 75,000 white, and 25,000 colored or native.

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Commission from ORANGE FREE STATE to the International Exhibition:

CHARLES W. RILEY, Consul-General. Digitized by Google

## LUXEMBOURG.

THE Grand Duchy of Luxembourg is connected with the Netherlands in the person of the sovereign, but has a constitution and administration of its own. The King of Holland, as Grand Duke, appoints a deputy-governor. Dutch Luxembourg was a part of the Germanic Confederation from its formation, in 1815, till its dissolution, in 1866. In 1867 its neutrality was guaranteed by the great powers. Its present constitution dates from 1868. The chamber of deputies consists of 40 members chosen for 6 years by direct vote in the electoral districts. Area, 990 Eng. sq. miles. Population (1871) 197,528, the most of whom are engaged in agriculture. The chief products are wine, corn, hops, hemp, and flax. In the eastern districts there are iron mines, and lime and slate quarries. The majority of the inhabitants are Walloons, the rest mainly Germans. The capital is Luxembourg. By the law of 1868, the army consists of 13 officers, 500 under-officers and privates, besides 110 gendarmes.

## CHINA.

THE following table gives the area and population of the various divisions comprising the Chinese empire:

	AREA IN ENGLISH SQ. MILES.	POPULATION.
China proper, . . . . .	1,534,953	405,213,152
DEPENDENCIES.		
Mandchuria, . . . . .	362,313	3,000,000
Mongolia, . . . . .	1,288,035	2,000,000
Thibet, . . . . .	643,734	6,000,000
Corea, . . . . .	90,300	8,000,000
Lieukhien Islands, . . . . .	2,310	
Liaotung, . . . . .	2,982	1,000,000
Total, . . . . .	3,924,727	425,213,152

China proper is included between  $18^{\circ} 15'$  and  $43^{\circ} 15'$  north latitude and  $98^{\circ}$  and  $122^{\circ} 40'$  east longitude. Its coast-line exceeds 2500 miles, and its land frontier 4400 miles. It is divided into eighteen provinces, and includes the two large islands of Formosa and Hainan. The administration of the empire is parceled out into separate governments, corresponding with the provincial divisions, each of which has a complete organization, exchequer, army, and naval force of its own. Besides providing for the cost of its own administration, each province is required to remit annually to Peking a certain portion of its revenue to meet the expenses of the court, central government, and garrison of Peking, as well as to provide for exigencies arising in other provinces, and for the requirements of the garrisons in Turkestan, Mongolia, and Mandchuria, which are administered by military governors.

According to the latest reports, the imperial army comprises a total of 850,000 men, including 678 companies of Tartar troops, 211 companies of Mongols, and native Chinese infantry, a kind of militia, numbering 120,000 men. The native soldiers do not live in barracks, but in their own houses, mostly pursuing some civil occupation.

The Chinese are pre-eminent for their indefatigable industry. Of the immense

territory peopled by them, there is scarcely a rood of arable ground that is not assiduously cultivated. Unfortunately, however, their husbandry is, to a great extent, nullified by the rude and ill-adapted implements employed. Therefore scientific agriculture is but slightly advanced in China, although the Chinese system of land irrigation is superior to that of any other people. As a manufacturing nation the Chinese are highly distinguished; porcelain originated entirely with them, and the art of spinning silk they also gave to the West. The lacquered ware produced in China, though very beautiful, must be considered inferior to that of Japan, but in the more minute arts of carving and inlaying, the Chinese have no superiors. Their ivory and mother of pearl industry is too well known to need description. Gunpowder, though a Chinese invention, is little manufactured, and that little of indifferent quality. Paper is ingeniously made of various material; it is, in general, thin, silky, and highly absorbent of ink.

Chinese trade has the peculiarity of being, for the most part, internal, the country supplying most articles of subsistence or luxury, and is carried on by means of canal and river navigation. The principal exports are tea, porcelain, raw and spun silk, sugar, rhubarb, embroidery, lacquered wares, and carved articles of domestic ornament. The imports consist mainly of cotton and woolen goods, opium, raw cotton, furs, and edible birds' nests, which form an expensive luxury, and are held in high esteem. The total value of commodities exported from China, in 1865, reached the figure of \$173,609,085, as against imports of \$238,504,520. Of the exports, tea is the chief, showing a total quantity of 223,679,182 pounds shipped. The export of raw silk for the same year aggregated 40,726 bales, and of cotton, 35,855,792 pounds.

The grand canal, about 700 miles in length, has greatly facilitated the internal trade of the country. China is traversed in all directions by 20,000 imperial roads, most of which are badly kept. There is a postal service, but of a very rude kind.

Education, as the high road to official employment, to rank, wealth, and influence, is eagerly sought by all classes. Literary proficiency commands everywhere respect and consideration, and primary instruction penetrates to the remotest villages. Self-supporting day-schools are universal throughout the country, and the office of teacher is followed by a great number of the *literati*. Government provides state examiners, but does not otherwise assist in the education of the people.

The Chinese executive system is based on those noteworthy competitive examinations which are intended to sift out from the millions of educated Chinese the best and ablest for the public service.

Commission for CHINA to the International Exhibition:

ROBERT HART, ESQ., Inspector General of Imperial Maritime Customs.

G. DETRING, ESQ., Commissioner of Customs.

E. B. DREW, ESQ., Commissioner of Customs.

W. SCOTT FITZ, ESQ.

H. SEYMOUR GEARY, ESQ.

*Resident Commissioners in Philadelphia.*

JAMES H. HART, ESQ., Commissioner of Customs.

ALFRED HUBER, ESQ., Commissioner of Customs.

J. L. HAMMOND, ESQ., Commissioner of Customs.

EDWARD CUNNINGHAM, ESQ.

W. W. PARKIN, ESQ.

F. P. KNIGHT, ESQ.

W. NOYES MOREHOUSE, ESQ., Imperial Maritime Customs, Secretary.

# JAPAN.

JAPAN proper comprehends four large islands, viz. : Nippon (the Japanese mainland), Sikok or Sikopf, Kiusiu, and Yesso, and extends from  $31^{\circ}$  to  $45^{\circ} 30'$  north latitude. The empire of Japan includes about 3800 small islands and islets besides the four larger ones, and is situated between  $26^{\circ}$  and  $52^{\circ}$  north latitude, and  $128^{\circ}$  and  $151^{\circ}$  east longitude. It is bounded on the north by the Sea of Okotsk, on the east by the north Pacific Ocean, on the south by the eastern Sea of China, and on the west by the Sea of Japan. The islands of Japan appear to be of volcanic origin, and that part of the Pacific on which they rest is still intensely affected by volcanic action. Earthquakes occur very frequently in Japan, although certain parts of the country are exempt. Japan has been called the land of mountains: but though these are very numerous, and many of them volcanic, they are of moderate elevation, and rarely attain the limits of perpetual snow. The country generally is of moderate elevation, with fertile valleys, picturesque landscapes, and a coast indented with magnificent harbors; the soil is productive, rich in mineral wealth, and teeming with every variety of agricultural produce. Springs, lakes, and rivers are numerous; but the last, being sand-choked, are valuable chiefly for the purposes of irrigation.

Our knowledge of the climate of Japan is yearly increasing. June, July, and August are the months of rain, which sometimes descends in unceasing torrents. The months of October and November are the pleasantest and most genial of the twelve, when fine weather is enjoyed without the scorching heat of summer. The summers are very hot, and the winters in the northern parts almost Siberian; the thermometer rising to  $96^{\circ}$  in the shade in the former, and sinking to  $18^{\circ}$  below zero in the latter season. Alcock says: "The thermometer in the shade (during the summer) ranges from  $70^{\circ}$  to  $85^{\circ}$ , and averages  $80^{\circ}$  between the morning and the evening, while it is sometimes below  $70^{\circ}$  at night." Hurricanes and waterspouts are frequent; dense fogs hide the sun, sometimes for four or five days together; and about the change of the monsoons, typhoons and equinoctial gales frequently sweep the Japanese seas.

The following figures are furnished by the Japanese commission :

Area, . . . . .	23,740 ris (the ri equals $2\frac{1}{2}$ miles).
Population.—Male, . . . . .	16,891,729
Female, . . . . .	16,408,946
Total, . . . . .	33,300,675
Imports, . . . . .	22,841,166.93 yens.*
Exports, . . . . .	18,367,259.29 "
Revenue, . . . . .	81,552,294. "
Expenditure, . . . . .	79,881,820. "
Army, . . . . .	42,073 men

The navy consists of 20 vessels, manned by 3757 men.

The country is rich in minerals, gold, silver, iron, sulphur, and especially copper abound. There are also large quantities of coal. Amongst the most remarkable of its vegetable productions is the camphor tree, the varnish or lacquer tree, the paper mulberry tree, the vegetable wax tree, the tea shrub, the tobacco plant, and the rice plant. The principal manufactures are those of silk and cotton. The internal trade is very extensive, and rigid regulations are in force to protect and encourage home industry. In the mechanical arts the Japanese have attained great excellence, especially in metallurgy, and in the manufacture of porcelain, lacquer ware, and silk fabrics. In some of these departments works are produced so exquisite in design and execution, as to more than rival the best products of Europe

\* The yen equals 99.7 cents gold.

The Japanese government is organized on a basis which is partly European. The Mikado is supreme in temporal and spiritual matters, but the work of government is carried on by the Great Council, which is divided into three sections, denominated Centre, Right, and Left. The Centre is composed of the Prime Minister, Vice Prime Minister, and five advisers. The left is made up exclusively of the Council of State, the functions of which are analogous to those of the French Conseil d'Etat, so far as the preparation and discussion of laws is concerned. The Right includes all the ministers and vice-ministers of eight departments into which the administration is divided. The ministers, either individually or united in a Cabinet, decide all ordinary questions; but points of real importance are reserved for the Great Council, presided over by the Mikado. The local administration in the provinces is in the hands of prefects, one of them residing in each of the 75 districts into which Japan is divided.

Education is very general in Japan. In 1871 a Ministry of Instruction was created, and as a result of its efforts, public primary schools are increasing rapidly, especially in the towns; but the movement is far more marked in the western provinces and on the coast than in the interior. Private schools are more abundant still, and any person being at liberty to establish them,—subject to a permission, which is always given,—they spring up with facility wherever wanted. In order to facilitate the acquirement of foreign languages, the government has engaged European professors, and has also sent, at public expense, a large number of students to America and Europe. The first line of railway, from Yokohama to Yeddo, 17 miles long, was opened for traffic on the 12th of June 1875, and other lines were in progress at that date.

The post office carried 17,095,842 letters in 1874. The number of post offices at that date was 3244.

Commission from the JAPANESE EMPIRE to the International Exhibition:

HIS EXCELLENCY OKUBO TOSHIMICHI, Minister of the Interior and Privy Counsellor, President.

HIS EXCELLENCY LIEUTENANT-GENERAL SAIGO TSUKUMICHI, Imperial Army, Vice-President.

MR. KAWASE HIDEHARU, Vice-President Bureau of Agriculture and Industry, Commissioner-General.

MR. TANAKA YOSHIO, Ministry of the Interior.

MR. SEKIZAWA AKEKIO, Bureau of Agriculture and Industry.

MR. YAMATAKA NOBUAKIRA, Bureau of Agriculture and Industry.

MR. SHIODA MASASHI, Bureau of Agriculture and Industry.

MR. SUZUKI TOSHINOBU, Bureau of Agriculture and Industry.

MR. SUGIYAMA KADZUNARI, Bureau of Agriculture and Industry.

MR. HIDAKA LIRO, Lieutenant Imperial Army.

MR. AMORI KORENAKA, Bureau of Agriculture and Industry.

MR. ISHIHARA TOYOYASU, Bureau of Agriculture and Industry.

MR. ISHIDA TAMETAKE, Bureau of Agriculture and Industry.

MR. YAMAO TSUNETARO, Bureau of Agriculture and Industry.

MR. KUBO HIROMICHI, Bureau of Agriculture and Industry.

MR. FUKUI MAKOTO, Bureau of Agriculture and Industry.

MR. SMIBATA HIROSHI, Bureau of Agriculture and Industry.

MR. MAKIYAMA KOHEI, Bureau of Agriculture and Industry.

MR. ASMI TCHUGA, Bureau of Agriculture and Industry.

MR. ISHII YOSHITAKA, Bureau of Agriculture and Industry.

MR. ASAHII SUSUMU, Bureau of Agriculture and Industry.

MR. YOSHIO NAGAMASA, Bureau of Agriculture and Industry.

MR. SASASE MOTOAKIRA, Bureau of Agriculture and Industry.

MR. TSUCHIYA SHIGENAO, Attache.

MR. YOSHIKAWA NISUKE, Attache.

MR. AKUSAWA SUSUMU, Attache.

MR. SANDA TADASHI.

MR. TAWARA WAKICHIRO, Attache.

## HAWAII.

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THE islands forming the kingdom of Hawaii are eight in number, exclusive of one or two small islets. The chain runs from southeast to northwest, and lies in the middle of the Pacific Ocean, in latitude  $19^{\circ}$ — $22^{\circ}$  north, and longitude  $155^{\circ}$ — $160^{\circ}$  west. Area 7400 square miles; population (1872), 56,897, of whom 2539 were Europeans. The names, with the areas, of the respective islands are: Hawaii (formerly Oghyhee), 4210 square miles; Maui, 760; Oahu, 600; Kauai, 590; Molokai, 270; Lanai, 150; Niihau, 97; and Kahoolawe, 65 square miles.

Situated near the middle of the Pacific Ocean, about half the distance from San Francisco in North America that they are from Melbourne in Australia and Canton in China, the Sandwich Islands form an oasis in the middle of a wide ocean waste, and offer convenient stations for the refreshment and repair of the merchantmen and whalers that traverse the Pacific. They are of volcanic origin, and contain the largest volcanoes, both active and quiescent, in the world. The most prominent physical features of the group are the two lofty mountain peaks of Hawaii, Mauna Kea and Mauna Loa, each of which is 14,000 feet in height, or within 1860 feet of the loftiest of the Alps. Besides those two chief peaks, which stand apart from each other, and one of which is covered with perpetual snow, the island is traversed by other mountains, which give it a rugged and picturesque outline, and in some cases front the sea in bold, perpendicular precipices, from 1000 to 2000 feet in height. In general, the islands are lofty—the small islet of Lehua is 109 feet high, and the upland regions of Kauai are, on an average, 4000 feet above sea level. Within the coral reefs, which, in single, and more rarely in double ridges, skirt portions of the coasts, sandy shores, leading up to rich pasture-lands, and occasionally to productive valleys, are frequently seen. Everywhere, however, the configuration of the surface betrays the volcanic origin of the islands. Extinct volcanoes occur in most of the islands. Kilauea, on the Mauna Loa mountain in Hawaii, the largest active volcano in the world, has an oval-shaped crater nine miles in circumference, and is 6000 feet above sea level. In the centre of this immense caldron is a red sea of lava, always in a state of fusion. At intervals, the lava is thrown to a great height, and rolls in rivers down the mountain sides. On Maui, the crater of Mauna Haleakala (House of the Sun), by far the largest known, is from 25 to 30 miles in circumference, from 2000 to 3000 feet deep, and stands 10,000 feet above sea level. Within this huge pit, about 16 basins of old volcanoes, whose ridges formed concentric circles, have been counted. Good harbors are few. The chief is that of Honolulu, in Oahu, with  $22\frac{1}{2}$  feet of water in its shallowest parts. On the same island is Puuloa, an immense basin, with 12 feet of water on the bar at low tides. During the prevalence of the trade wind, which blows southwest for about nine months of the year, the south shores of the islands afford safe anchorage almost everywhere.

At Honolulu, the extremes of temperature in the shade during the 12 months are  $90^{\circ}$  and  $50^{\circ}$ , and the diurnal range is  $12^{\circ}$ . Rains brought by the northeast trade-wind are frequent on the mountains; but on the leeward side of the islands little rain falls, and the sun is rarely obscured by the clouds. The soil, the constituent parts of which are mainly scorice, decomposed lava, and sand, is generally thin and poor. This, however, is not universally the case. At the bases of the mountains and in the valleys, where abrasion, disintegration, and the accumulation of vegeta-



ble mould have gone on for ages, there are extensive tracts as fertile as they are beautiful. The islands produce fine pasturage in abundance, and large herds are bred and fattened to supply meat to the whalers and merchant ships. The upland slopes of the mountains are clothed with dense forests; and lower down are grassy plains and sugar and coffee plantations. Basalt, compact lava, coral rock, and sandstone are used for building purposes. No metals occur. Several of the islands, especially Hawaii and Kauai, are well supplied with rivers, which, from the size and conformation of the group, are necessarily small, but afford great facilities for irrigation. Vast numbers of semi-wild horses roam the islands, and while they consume the pasturage and break down the fences, are of little use. The indigenous fauna is small, and consists mainly of swine, dogs, rats, a bat that flies by day, birds of beautiful plumage, but for the most part songless. Among the indigenous trees and plants are the sugar-cane, banana, plantain, cocoanut, candle-nut, various palms, the taro, a succulent root which formed the staple of the food of the natives, and is still generally used, the cloth-plant, and the *hi*, the roots of which were baked and eaten, while the leaves were used for thatching huts. Cattle and other useful and foreign animals and plants were introduced by Vancouver and other navigators. In 1860 there were 30,000 mules and semi-wild horses in the kingdom.

The government of Hawaii is a constitutional monarchy.

The public revenue during the biennial period ending March 31, 1874, was 1,136,524 dollars; the public expenditure, 1,192,512 dollars. The public debt, at the same date, 355,050 dollars.

The principal exports during the year 1874 were: Sugar, 24,567,000 pounds; rice, 1,188,000 pounds; coffee, 75,000 pounds; pulu, 418,000 pounds; tallow, 126,000 pounds; wool, 400,000 pounds; hides, 94,575. Total value, 1,839,000 dollars. The imports during the same year amounted in value to 1,310,000 dollars.

Of 115 vessels that entered the port of Honolulu during 1874, 64 were American, 30 English, 15 Hawaiian, etc.

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Commission from THE HAWAIIAN ISLANDS to the International Exhibition :

W. L. MOEHONUA, Minister of the Interior and President of the Commission.

HON. S. G. WILDER, Privy Councillor of State.

HON. J. U. KAWAINUI, Privy Councillor of State.

ELISHA H. ALLEN, JR., Hawaiian Consul General, New York.

H. R. HITCHCOCK, Inspector General of Schools, Hawaiian Islands, and Special Agent of Hawaii on Centennial Commission.

REV. SAMUEL C. DAMAN.

MR. WILLIAM TUFTS BRIGHAM.

## BRAZIL.

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BRAZIL is the most extensive state of South America. Towards the interior, it borders on all the other states of that continent except Chili and Buenos Ayres—on Uruguay, the Argentine Confederation, Paraguay, Bolivia, Peru, Ecuador, New Granada, Venezuela, and English, Dutch, and French Guiana; while its seaboard, beginning about 200 miles to the north of the Amazon, and reaching to within the same distance of the Plata, projects into the Atlantic fully 1000 miles to the east of the direct line between its two extremes. This immense country extends between latitude  $5^{\circ} 10'$  north and  $46^{\circ} 10'$  south, and between longitude  $35^{\circ}$  and  $70^{\circ}$  west, being, in round numbers, 2600 miles long and 2500 broad. The area, according to official accounts, is 3,100,000 square miles, with a population, in 1872, of 12,000,000, including 1,683,684 slaves, and consisting of aboriginals, Africans, and Europeans, the first being proportionately fewer than in most parts of America.

Brazil differs in many respects from most of the other divisions of the new continent. It knows nothing of the volcanoes and earthquakes of the Pacific coast; with winds blowing constantly from the Atlantic Ocean, it is exempted from those droughts which are always blighting one or other of the slopes of the Andes, the remoter slope in Peru and Chili, and the nearer in Buenos Ayres and Patagonia; its mines, again, are as famous for gold and diamonds as those of the western Cordilleras for silver. In its hydrography, Brazil contrasts unfavorably with the other divisions. While the Amazon and the Plata, the Mississippi and the St. Lawrence—not to mention countless rivers of inferior magnitude on both shores—are for the most part practicable almost to their sources, the streams of Brazil, with the exception of the Amazon, are mostly impeded throughout by cataracts and shallows, thus counterbalancing, as it were, its matchless seaward facilities by the deficiencies of its inland communications. Further, the most navigable of these streams, instead of entering the open sea, mingle their waters with those of the Plata or of the Amazon—the Parana and the Uruguay joining the former, and the Madeira, the Tapajos, the Zingu, and the Tocantins, the latter; and even among those that do send their tribute at once to the ocean, a similar direction is sometimes impressed by the dividing ridges—the San Francisco, for instance, by far the largest of them, running to the northward parallel with the southeast coast through  $11^{\circ}$  of latitude, and leaving only  $4^{\circ}$  of longitude for its remaining course to the Atlantic. These hydrographic peculiarities must be the more strongly felt, inasmuch as a humid surface and a luxuriant vegetation conspire to render ordinary roads all but impossible.

Among the mineral treasures, besides gold and diamonds, already mentioned, iron of superior quality is abundant; and salt, also, is extensively produced in saline marshes by the alternate processes, according to the season, of inundation and evaporation. The productions of the soil are, of course, equally various and rich. The cotton is naturally excellent, and the tea-plant of China has been introduced, though hitherto with indifferent success. The exports necessarily vary in different sections of the country. From the north, they are coffee, cotton, cocoa, sugar, and tobacco; from the south, hides, tallow, horns, etc.; and from the middle, drugs, diamonds, gold dust, dyes, rice, manioc, tapioca, spirits, and rosewood.

The total value of the imports into Brazil, including bullion and specie, averaged about \$91,000,000 in the five years 1869—1873, and that of the exports, during the same period, likewise including bullion and specie, about \$110,000,000.

The executive authority is vested in the Emperor, who, besides being aided by a council of state, must act through responsible ministers. The legislature consists of two chambers, which sit four months every year. Both the deputies and the senators, who must have annual incomes respectively of 800 milrees and 1600, are indirectly elected by voters who must possess 200 milrees per annum—the former for four years, and the latter for life. The senate, however, appears to represent the crown as well as the people, inasmuch as each constituency merely nominates three individuals for his majesty's choice of one. Justices of the peace, also, are appointed by the respective communities; and in the courts generally, whether civil or criminal, there prevails trial by jury.

The budget for the year ending June 30th, 1876, calculates the receipts at 107,133,070 milrees, and the expenditures at 102,634,053 milrees.\* The public debt, on the 1st of April, 1875, was, including paper money, 664,739,395 milrees.

In a vote passed by the House of Congress, June, 1869, the strength of the standing army was fixed at 30,000 on the peace footing, and at 60,000 on the war footing. There were actually under arms, according to official reports, at the end of April, 1874, 28,933 troops, of which number 2397 were in garrison in Paraguay.

The imperial navy consisted, in 1875, of 61 men-of-war, carrying 230 guns, and crews aggregating 4136.

The empire possessed, at the end of 1873, railways of a total length of 714 English miles, open for traffic. There were railways of an aggregate length of 397 miles in course of construction at the end of June, 1874. There were, at the beginning of the year 1874, telegraph lines to the extent of 3375 miles. The number of offices was 74 at the same date. The post office carried 12,251,000 letters in the year 1873, of which number 6,548,000 came from or to Rio de Janeiro, the capital.

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Commission from BRAZIL to the International Exhibition :

**HIS HIGHNESS, GASTON D'ORLEANS, Conde d' Eu, Marshal of the Army, President.**

**VISCOUNT DE JAGUARY, 1st Vice-President.**

**VISCOUNT DE BONN-RETIRO, 2d Vice-President.**

**VISCOUNT DE SOUZA FRANCO.**

**JOAQUIN ANTONIO DE AZEVEDO.**

**HIS EXCELLENCY, A. P. DE CARVALHO BORGES, Envoy Extraordinary and Minister**

**Plenipotentiary of His Majesty the Emperor of Brazil.**

**FELLIPE LOPES NETTO, Vice-President.**

**DR. JOSE DE SALDANHA.**

**DR. NICOLAS JOAQUIM MOREIRO.**

**PEDRO PAES LEME.**

**CAPT. LUIZ DE SALDANHA, Naval Attaché.**

**DR. J. M. DE SILVA COUTINHA.**

**MR. B. F. TORREAS DE BANOS, Secretary of Legation.**

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\* The milreis — 1000 reis, 54½ centm.

## ARGENTINE REPUBLIC.

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THE Argentine Republic—the confederation of the Rio de la Plata, or River of Silver, South America—is a federal union of fourteen provinces and three large territories, covering an almost unbroken plain of 1,200,000 square miles, with a population of about 2,000,000 inhabitants. It extends from 22° south latitude to the straits of Magellan, and from 59° west longitude to the Andes.

Each province has its own legislature, courts of justice, and political government; but civil, penal, and commercial laws are common to all the provinces, codes of such laws having been issued by the congress of the confederation.

The President of the republic is elected for a term of six years by the representatives of the provinces, and is not eligible for re-election. The Vice-president, elected in the same manner, fills the office of chairman of the Senate, but has otherwise no political power. The President is commander-in-chief of the troops, and appoints to all civil, military, and judicial offices; but he and his ministers are responsible for their acts, and liable to impeachment before the Senate by accusation of the House of Representatives. Legislative power is vested in a Senate, of members elected by the provincial legislatures, two from each province, and a House of Representatives, elected by the people, and apportioned to each province according to population. The senators hold their office for nine years, and the representatives for three.

The chief exports of the country are wool, hides, salt beef, and tallow; but its resources embrace all the products of the tropical and temperate zones, as may be seen by the catalogue of its exhibits.

The farming stock of the republic is estimated at 15,000,000 horned cattle, 4,000,000 horses, and 80,000,000 sheep, whose aggregate value cannot fall short of \$200,000,000, gold, yielding about \$50,000,000 of export produce per annum.

The total trade may be estimated at \$100,000,000 per annum. In 1874 the imports amounted to \$55,961,117, against over \$71,000,000 in the previous year. The exports amounted to \$43,104,712, against \$45,869,314 in 1873. The decrease in imports and exports was caused by a severe commercial crisis, from which the country is just recovering.

The annual revenue amounted to \$20,217,231 in 1873, but the crisis reduced it in 1874 to \$16,090,661, or over \$2,000,000 less than in 1872, and nearly \$4,500,000 less than in 1873. The general expenditures in 1874 reached the sum of \$28,596,006. The total debt in January, 1875, was \$68,416,043.

The regular army numbers 10,807 men, divided as follows: cavalry 4800, infantry 4400, artillery 400, and 1173 special troops. The navy is composed of 26 vessels, among them 2 ironclads and 6 gunboats, with crews amounting in all to 900.

The capital of the republic is provisionally situated at the city of Buenos Ayres, capital of the province of the same name.

(The statistics given above have been furnished by the commission of the Argentine Republic.)

A network of railways, constructed mainly at the expense of the State, has been in progress for several years. At the end of the year 1873 there were 664 miles open for traffic, and 642 miles of State railways in course of construction. There were

besides, at the end of 1873, railways of a total length of 1997 miles, sanctioned by the government, including an international line from Buenos Ayres to Chili, of 894 miles.

At the end of September, 1873, there were 4170 miles of telegraph lines in operation. The total length of telegraph wires at the same date was 8267 miles. The number of telegraphic dispatches during the same year was 170,079.

The post office, in the year 1873, carried 1,493,700 parcels and packets, and 4,574,188 letters. The number of letters carried doubled in the five years from 1869 to 1873.

Commission from the ARGENTINE REPUBLIC to the International Exhibition :

CARLOS CARRANZA, President.  
 EDWARD SHIPPEN, Vice-President.  
 EDW. T. DAVISON, Treasurer, Consul-General.  
 DIEGO DE CASTRO, Secretary.  
 E. MARA DAVISON, Deputy Member.

*Central Committee.*

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RICARDO NEWTON,  
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 JOSE M. JURAFDO,  
 EMILIO DUFOREAL.

## CHILI.

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CHILI lies wholly between the water-shed of the Andes and the shores of the Pacific, stretching coastwise from Bolivia to Patagonia, in latitude  $25^{\circ} 30'$  to  $43^{\circ} 20'$  south, and longitude  $69^{\circ}$  to  $74^{\circ}$  west, having an extreme length of about 1240 miles and an average breadth of fully 120. Within these limits, however, lies the virtually independent Araucania, comprising most of the mainland to the left of the Biobio, while the southern portion is confined chiefly to Chiloe and its archipelago. Chili is divided into thirteen provinces, of which, including certain outlying dependencies in Patagonia, the aggregate area has been officially stated at nearly 140,000 square miles, and the population in 1874 at 2,068,447. Chiloe, the insular province of Chili, is separated from the rest of the republic, or rather from Patagonia, by the Gulf of Ancud, extending in south latitude from  $41^{\circ} 40'$  to  $43^{\circ} 20'$ , and in west longitude from  $73^{\circ}$  to  $74^{\circ}$ . The province, which, in 1874, numbered 64,536 inhabitants, contains, in addition to Chili proper, about 60 islets, of which some 30 are uninhabited. The predominant rocks of Chili are crystalline and metamorphic. They form the range of the Andes, except in those districts in which active volcanoes exist, where they are covered with recent volcanic rocks. They occupy also the whole of the level ground between the mountain range and the shores of the Pacific, with the exception of a narrow stretch of palæozoic fossiliferous strata which run along the coast south from Santiago for a distance of 300 miles. The coast-line of Chili is being continually altered from the elevation of the whole country to an extent of at least 1200 miles along the Pacific shores, produced by volcanic agency.

Physically, the continental portion of the republic presents many singularities. Of all the maritime regions on the globe, it is perhaps the most isolated. On every side but the sea, and that sea very remote from the main thoroughfares of commerce, it is beset by difficulties of communication. With the lonely wilderness of Patagonia to the south, and the dreary desert of Atacama on the north, it is bounded on the east by a mountain chain which, altogether impracticable in winter, can be crossed, even in summer, only by a few passes ranging between 12,450 feet and 14,370 feet in elevation. Moreover, this strip between the Andes and the Pacific is broken into plateaus in the interior, and valleys on the coast, by two longitudinal ranges, with numerous lateral spurs; while, throughout the length and breadth, the general level gradually descends, as well to the south as to the west. In point of mere temperature, so rugged a surface, covering fully  $15^{\circ}$  of latitude, and attaining an altitude of more than four miles within about  $2^{\circ}$  of longitude, must present nearly every possible variety. Through the reciprocal action of the Andes and the prevailing winds, the rain-fall graduates itself, with something of mathematical regularity, from the parching skies of the north to the drenching clouds of the south, a graduation which, disturbed merely by the melting of the mountain snows, is, in a great measure, necessarily reflected in the condition and magnitude of the countless water-courses. Hence the rivers to the north of the Maypo, which enters the Pacific near latitude  $34^{\circ}$ , are but inconsiderable streams; while, further to the south, the Maule, the Biobio, and the Calacalla are all to some extent navigable.

From the cause last mentioned, different districts vary remarkably in their productions. To the north of the Coquimbo, about latitude  $30^{\circ}$ , is chiefly an arid

waste, redeemed, however, from being valueless by its mines; and to the south of the Biobio, about latitude 37°, timber and pasturage divide the soil between them. The intermediate centre alone is fitted for agriculture, yielding, besides maize and hemp, European grains and fruits in abundance. Notwithstanding all the varieties and vicissitudes of climate, the country may claim to be, on the whole, extremely healthy. The manufactures are earthenwares, copperwares, linens, cordage, soap, leather, and brandy; and, in addition to the wheat and metals already specified, the exports, especially from the south, embrace tallow, hides, jerked beef, and live stock.

The public debt of Chili, at the beginning of 1874, was 48,149,850 pesos (or dollars). The budget for 1875 stated the expenditures at 16,474,890, and the receipts at 16,440,000 pesos.

The army consisted, in 1874, of 3516 men, the force comprising 2000 infantry, 712 cavalry, and 804 artillery. The navy numbered 10 vessels, carrying 34 guns.

The imports, for 1874, were 38,810,000 pesos, and the exports, during the same year, were 36,510,000 pesos. The commercial navy of Chili consisted, in 1873, of 250 vessels of 58,230 tons burthen, with 2900 sailors.

In 1875 there were 991 kilometres of railway in operation; of these, 628.6 belonged to the State and 362.4 to companies.

The work of the post office, for 1873, was 5,116,797 letters and 6,233,916 newspapers, etc.

There were, at the same time, 55 telegraph offices. The length of lines was 3729 kilometres; of wires, 4909 kilometres. Number of despatches, in 1873, 265,318.

#### Commission from CHILI to the International Exhibition:

##### *Resident Commissioners.*

SR. DON ADOLFO YBANEZ, Envoy Extraordinary and Minister Plenipotentiary of Chili.

EDWARD SHIPPEN, ESQ., Consul and President.

DR. J. PATTERSON Burd, Secretary and Treasurer.

SR. FRANCISCO GONALEZ ERRAZURIZ, Secretary of Chilian Legation.

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SR. ARMANDO PHILLIPPI.

FRANCISCO SOLANO ASTA BURUAGO.

SR. RAMON BARROS.

SR. EUGENIO FIGUEROA.

## PERU.

PERU is an important maritime republic in South America, bounded on the N. by Ecuador, on the W. by the Pacific, on the S. and S.E. by Bolivia, and on the E. by Brazil. It lies in lat.  $3^{\circ} 25'$  to  $21^{\circ} 30'$  S., and in long.  $68^{\circ}$  to  $81^{\circ} 20'$  W. The general outline resembles a triangle, the base of which is formed by the boundary-line between Peru and Ecuador on the north. Its area is estimated at upward of 500,000 square miles, and its population at 2,500,000. The area of Peru, however, can only be given approximately, as, on the east side of the Andes and between the Amazon and the Purus, there is a wide and unexplored expanse of country, upon which both Peru and Brazil have claims which have not yet been determined. The country is 1100 miles in length, 780 miles in extreme breadth along the northern boundary, but is little more than 50 miles wide in the extreme south. Following the general direction, and not including windings, the coast-line is 1660 miles in length. The shores are in general rocky and steep; in the south lofty cliffs rise from the sea, and in some places the water close inshore has a depth of from 70 to 80 fathoms. Farther north, however, sandy beaches occur, and in the extreme north the shores are often low and sandy and covered with brushwood. Owing to the comparative unfrequency of bays and inlets along the coast, the harbors are few and unimportant. Those of Callao (the port of Lima) and Payta afford the most secure anchorage, and the others are Trujillo, Cañete, Pisco, Camaná, Islay, Ilo, Arica and Iniquique.

The islands on the Peruvian coast, although valuable, are extremely few in number and small in extent. In the north are the Lobos Islands; on their eastern and more sheltered sides they are covered with guano. The Chincha Islands, famous as a source of supply for guano, also form a group of three, and are situated in the Bay of Pisco, about twelve miles from the mainland, and in lat.  $13^{\circ}$  to  $14^{\circ}$  S., long.  $76^{\circ}$  and  $77^{\circ}$  W. They lie in a line running north and south, and are called the North, Middle, and South Islands, respectively. Each island presents, on the eastern side, a wall of precipitous rock, with rocky pinnacles in the centre, and with a general slope toward the western shore. The cavities and inequalities of the surface are filled with guano, and this material covers the western slopes of the islands to within a few feet of the water's edge. There is no vegetation.

The surface of Peru is divided into three distinct and well-defined tracts or belts, the climates of which are of every variety from torrid heat to arctic cold, and the productions of which range from the stunted herbage of the high mountain-slopes to the oranges and citrons, the sugar-canes and cottons, of the luxuriant tropical valleys. These three regions are the *Coast*, the *Sierra*, and the *Montaña*. The *Coast* is a narrow strip of sandy desert between the base of the Western Cordillera and the sea, and extending along the whole length of the country. This tract, varying in breadth from thirty to sixty miles, slopes to the shore with an uneven surface, marked by arid ridges from the Cordillera, and with a rapid descent.

It is, for the most part, a barren waste of sand, traversed, however, by numerous valleys of astonishing fertility, most of which are watered by streams that have their sources high on the slopes of the Cordillera. In the coast-region, properly so called, rain is unknown. This is caused by the coast of Peru being within the region of perpetual south-east trade-winds. The want of rain is compensated for, to some extent, by abundant and refreshing dews which fall during the night. The climate of the coast is modified by the cool winds. In the valleys the heat, though considerable, is not oppressive. The highest temperature observed at Lima in summer is  $85^{\circ}$ , the lowest in winter is  $61^{\circ}$  Fahr.



The *Sierra* embraces all the mountainous region between the western base of the maritime Cordillera and the eastern base of the Andes, or the Eastern Cordillera. The principal physical features of the *Sierra* are: 1. The plain of Titicaca, partly in Peru and partly in Bolivia. It is enclosed between the two main ridges of the Andes, and is said to have an area of 30,000 miles. In its centre is the great Lake Titicaca, 12,846 feet above sea-level, or 1600 feet above the loftiest mountain pass (the Col of Mont Cervin) of Europe. The lake is 115 miles long, from 30 to 60 miles broad, from 70 to 180 feet deep, and 400 miles in circumference. Its shape is irregular; it contains many islands, and several peninsulas abut upon its waters. 2. The Knot of Cuzco. The mountain-chains which girdle the plain of Titicaca trend toward the north-west, and form what is called the Knot of Cuzco. The Knot comprises six minor mountain chains, and has an area thrice larger than that of Switzerland. Here the valleys enjoy an Indian climate and are rich in tropical productions; to the north and east of the Knot extend luxuriant tropical forests, while the numberless mountain slopes are covered with waving crops of wheat, barley, and other cereals, and with potatoes, and higher up extend pasture-lands, where the vicuña and alpaca feed.

The *Montaña* or central region has an elevation of 12,000 feet above the sea-level, and forms a portion of the great central plain of South America. The virgin soil of the *Montaña* is of amazing fertility, while its climate, though not oppressively hot, is healthy. The forests consist of huge trees, of which some are remarkable for the beauty of their wood, others for their valuable gums and resins, and others as timber trees. A rank undergrowth of vegetation covers the country, and the trees are often chained together and festooned with parasites and closely-matted creepers. In this region, for the most part undisturbed by the voice of man, civilized or savage, animal life flourishes in endless variety, and birds of the brightest plumage flit among the foliage. Among the products which are yielded here in spontaneous abundance are the inestimable Peruvian bark, India-rubber, gum-copal, vanilla, indigo, copaiba, balsam, cinnamon, sarsaparilla, ipecacuanha, vegetable wax, etc. On the western fringe of the *Montana*, where there are still a few settlements, tobacco, sugar, coffee, cotton, and chocolate are cultivated with complete success.

The hydrography of Peru may be said to be divided into three systems—those of Lake Titicaca, the Pacific, and the Amazon. The streams that flow into Lake Titicaca are few and inconsiderable. The rivers, which, having their sources in the Western Cordillera, flow west into the Pacific, are about sixty in number; but many of them are dry in summer, and even the more important are rapid and shallow, have a short course, are not navigable even for canoes, and are mainly used for the purpose of irrigation. All the great rivers of Peru are tributaries of the Amazon. The Marañon, rising between the Eastern and Western Cordilleras, and flowing tortuously to the north-north-west, is generally considered to be the headwater of the Amazon. The Huallaga rises near the town of Huanuco, and flows northward to the Amazon. It is navigable for 600 miles, the head of its navigation (for canoes) being at Tingo Maria, within 100 miles of its source. The Yucayali, or Ucayali, an immense river, enters the Amazon 210 miles below the Huallaga. Its tributaries and upper waters, among which are the Pampas and the Apurimac, drain the greater portion of the Peruvian Sierra. The Purus, which reaches to the valleys of Paucartambo, within sixty miles of Cuzco, has not yet been explored. The Andes abound in mines of gold, silver, copper, lead, bismuth, etc.; and in the *Montaña* gold is said to exist in abundance in veins, and in pools on the margins of rivers.

But besides the precious metals, Peru possesses other most important mineral resources. In addition to the guano, to which allusion has already been made, another important article of national wealth is nitrate of soda, which is found in immense quantities in the province of Tarapaca. This substance, which is a powerful fertilizer, is calculated to cover, in this province alone, an area of fifty square

leagues. Here, also, great quantities of borax are found. The trade in guano, nitre, and borax is entirely in the hands of the government.

The vegetable productions of Peru are of every variety, embracing all the products both of temperate and tropical climes. The European cereals and vegetables are grown with perfect success, together with maize, rice, pumpkins, tobacco, coffee, sugar-cane, cotton, etc. Fruits of the most delicious flavor are grown in endless variety. Cotton, for which the soil and climate of Peru are admirably adapted, is now produced here in gradually increasing quantity. The land suited to the cultivation of this plant is of immense extent, and the quality of the cotton grown is excellent. The animals comprise those of Europe, together with the lama and its allied species.

The principal items of export in 1870 were: Guano, 482,399 tons; nitrate of soda, 147,800 quintals, valued at 6,624,000 soles;\* quinine, 11,921 quintals, valued at 810,641 soles; silver, 1,120,118 soles; hides and skins valued at 530,403 soles; wool valued at 396,610 soles.

The merchant navy in 1869 comprised 95 vessels, aggregating 9596 tons burden; included in this were 11 steamers of a total burden of 435 tons.

The constitution of Peru is modeled on that of the United States, the legislative power being vested in a Senate and House of Representatives, the former composed of deputies of the provinces, two for each, and the latter of representatives nominated by the electoral colleges of provinces and parishes, at the rate of one member for every 20,000 inhabitants. The parochial electoral colleges choose deputies to the provincial colleges, who in turn send representatives to Congress. In the session of 1875 the Senate was composed of 44 and the House of Representatives of 110 members.

The executive power is entrusted to a president, assisted by a vice-president, both elected by popular vote and serving for a term of four years.

By the terms of the constitution of 1867 there exists absolute political but not religious freedom, the charter prohibiting the public exercise of any other religion than the Roman Catholic, which is declared the religion of the State.

The public debt is divided into an internal debt, which in 1872 was about £2,500,000, and the foreign debt, which in 1875 amounted to £34,713,980. The public income during 1872 was 58,982,851 soles; the public expenditures during the same year 57,913,764 soles.

The army comprises: Infantry, 5600; cavalry, 1200; artillery, 2000; total, 8800 men. The navy consists of 6 iron-clads, one of which is a 14-gun frigate, 2 monitors of 3 guns each, and 3 other vessels of 2, 2, and 14 guns respectively; besides which there are 6 steamships of 2, 2, 4, 4, 14, and 30 guns.

A system of railways designed mainly to develop the exploitation of the mineral wealth of the country, including important mines of nitrate of soda, has been in course of construction for several years. At the end of June, 1875, there were open for traffic or in course of construction lines of State railways of a total length of 1007 English miles. There were also in course of construction at the end of June, 1875, railways of a total length of 600 English miles, to be completed in 1877-80. The most important of these are a line from Lima to Oroya, 222 miles in length, and another, offering vast engineering difficulties, 187 miles long, from Arequipa to Puno, across the summit of the Cordillera de los Andes.

There were in 1874 telegraph lines of a total length of 608 miles.

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Commission from PERU to the International Exhibition:

JOSE CARLOS TRACY, President.  
JUAN JOSE BARRIL.  
WILLIAM RUSSELL GRACE.

ANTONIO HERNANDEZ, Chief of Installation.  
ENRIQUE VALIENTE, Secretary.

\* One sol = 96½ cents, gold.

# MEXICO.

THE Mexican Republic extends between latitude  $15^{\circ}$  to  $32^{\circ} 42'$  north, and from  $88^{\circ} 54' 30''$  to  $119^{\circ} 25' 30''$  west longitude (meridian of Paris), or from  $12^{\circ} 21'$  on the east to  $18^{\circ}$  on the west of the City of Mexico, and is bounded on the north by the United States, on the south by Guatemala, on the east by the Gulf of Mexico, and on the west by the Pacific Ocean.

The country measures in its greatest length, from the conflux of the Gila and Colorado Rivers to the bar of Ocos, which is the lower end of the State of Chiapas, 2933 kilometres, by 1733.2 kilometres in width, from the mouth of the Rio Grande to that of the Rio del Fuerte. Its coast-line embraces 8272.47 kilometres. The area of the Mexican territory amounts to 1,972,648 square kilometres.

Mexico is a mountainous country. The *Cordillera*, which can be considered as a development of the Andes, that start in Patagonia, South America, occupies all the country, forming, in its gradual descent toward the coasts, large table-lands and fertile valleys. At the point where this Cordillera reaches the territory of New Mexico it is divided into two ramifications, the eastern one parallel to that of Lower California, its principal summits being the *Pico de Orizaba* and *Cofre de Perote*, and the western one, which becomes entangled with the other chains running toward the Nevado de Toluca. This point of intersection is marked by the volcano of *Colima*. The eastern chain has its nucleus in the *Zempoaltepec*, whose several ramifications extend over the State of Oaxaca, with the exception of the principal branch, which stretches over the State of Guerrero. Between these two mountainous chains there is another of no less importance, which includes the beautiful mountains Popocatepetl and Ixtaccihuatl. The latter, the Cofre de Perote, and the White Peak of Toluca are the highest peaks of the Mexican Andes.

The northern part of the republic, between latitude  $23^{\circ} 30'$  and  $32^{\circ} 42'$  north, belongs to the temperate zone, and the southern portion, included between  $15^{\circ}$  and  $32^{\circ} 30'$ , to the torrid zone. Owing partially to this division and to the difference in the level of the soil, there is in Mexico a great variety of climate. The warm temperature is observed in the region extending from the coast to the height of 3000 feet; the temperate, from the height of 3000 feet to 5000 feet; and the cold climate, from 5000 feet to the highest summits.

The population of Mexico amounts to 8,743,000, in the following proportions:

European, . . . . .	2,331,000
Indigenous, . . . . .	1,750,000
Of a mixed origin, . . . . .	4,662,000

Total, . . . . . 8,743,000

The following list shows which are the principal centres of population:

CITIES.	STATES.	POPULATION.
Mexico, . . . . .	District of Mexico,	200,000
Leon, . . . . .	Guanajuato,	90,000
Guadalajara, . . . . .	Jalisco,	75,000
Puebla, . . . . .	Puebla,	65,000
Guanajuato, . . . . .	Guanajuato,	63,000
Queretaro, . . . . .	Queretaro,	48,000
Celaya, . . . . .	Guanajuato,	37,000
Orizaba, . . . . .	Vera Cruz,	37,000
San Miguel Allende, . . . . .	Guanajuato,	35,000

A more complete idea of the manner in which the population is distributed can be arrived at by the following statistical table:

NAME OF STATES IN THEIR GEOGRAPHICAL ORDER.	SQUARE LEAGUES.	POPULATION.	INHABITANTS PER SQUARE LEAGUE.
Souhra, . . . . .	11,953	147,133	12
Chihuahua, . . . . .	15,534	179,971	11
Coahuila, . . . . .	8,692	67,691	8
Nuevo Leon, . . . . .	2,119	171,000	81
Tamaulipas, . . . . .	4,228	108,514	26
San Luis Potosi, . . . . .	4,262	397,735	93
Zacatecas, . . . . .	3,922	398,977	101
Aguas Calientes, . . . . .	327	86,576	264
Durango, . . . . .	6,921	173,942	27
Sinaloa, . . . . .	3,825	161,157	42
Jalisco, . . . . .	7,224	924,580	128
Colima, . . . . .	353	48,649	137
Michoacan, . . . . .	3,188	618,072	193
Guanajuato, . . . . .	1,648	874,000	532
Queretaro, . . . . .	506	166,643	329
Mexico, . . . . .	1,416	599,810	323
Hidalgo, . . . . .	1,251	404,207	323
Morelos, . . . . .	280	121,409	433
Guerrero, . . . . .	3,574	270,000	76
Puebla, . . . . .	1,735	830,000	478
Tlaxcala, . . . . .	221	117,941	533
Vera Cruz, . . . . .	4,047	380,976	94
Oaxaca, . . . . .	4,035	601,850	149
Tabasco, . . . . .	1,876	83,707	44
Chiapas, . . . . .	2,474	193,987	78
Campeche, . . . . .	3,848	86,453	22
Yucatan, . . . . .	4,818	282,634	59
Federal District, . . . . .	12.56	225,000	
Lower California Territory, . . . . .	8,709	21,000	2
	112,362.56	8,743,614	

The sugar and coffee culture, and the industries of which the agave plant is a basis, deserve particular mention. Numerous metalliferous veins are found in the mountains of the Sierra Madre and its different ramifications. These mineral districts contain not only the precious ores for which Mexico has been particularly noted, but also iron, tin, copper, and some other metals of great industrial value. Bismuth, having become scarce in former years, was found at last in the States of San Luis Potosi, Sinaloa, Queretaro, and Zacatecas. Discoveries of coal, precious opals, and quicksilver ores have also been made, the former in the States of Puebla and Vera Cruz, the latter in the States of Queretaro and Guerrero. The district of Huizucos has proved the most abundant in mercury, and during the last year has supplied the Mexican market with large quantities of this useful metal.

The geological formations which are found in the mineral veins of Mexico consist chiefly of the three following classes of rocks:

1. Compact mesozoic limestone.
2. Slate and sandstone.
3. Metalliferous porphyry, which probably corresponds to the Tertiary period.

As types of these three formations should be mentioned those found respectively in the States of Queretaro, Guanajuato, and Hidalgo. Many mountains of the above-mentioned types, and containing metalliferous veins, can be seen in almost all the States of the Republic. The argentiferous galenite and tetrahedrite prevail in the first of the aforesaid formations; the polybasite and the pyrrargirite in the second; and sulphuret of silver, argentiferous galenite, and blende in the third. The collections exhibited in the Mexican Department of the Main Building include some

samples of these mineral compounds, and of rocks useful as building and ornamental materials, among which the beautiful calcareous slates from the District of Tecali (State of Puebla) are worthy of especial mention.

Among the advantages which industry and trade have secured in Mexico, the double line of railroad from the principal port to the capital, and the exceptional and liberal tariffs established for goods intended for exportation, ought to be considered as the most beneficial. One of the aforesaid lines (via Orizaba) is complete, and has been in operation for several years; the other, which connects Vera Cruz with the town of Jalapa and with some of the agricultural districts of the State of Puebla, will soon be completed. The Mexican Congress has made very liberal grants for the construction of three railways intended to connect the city of Mexico with the northern frontier, and the districts more abundant in tropical products with the city of Puebla. Between this city and the trunk line of the Vera Cruz Railroad there is a branch line in operation. Another railroad connecting the capital with the city of Toluca is under construction, and in operation as far as the town of Tlalnepantla. Another line connects the port of Vera Cruz with the town of Medellin. The capital is connected by electric wires with the principal cities and with the ports and coasts of the republic.

The United States of Mexico maintain an active trade with the following nations, viz.: England, France, United States, Germany, Spain and Cuba, New Granada, Guatemala, Nicaragua, and on smaller scale with Belgium, Ecuador, and Italy.

The imports of foreign goods during the fiscal year ending June, 1873, amounted to \$29,062,406.94, taking as a basis the market value of the articles. All the articles are registered in the custom-house tariff of duties under eleven heads, viz.:

	INVOICE VALUE.	MARKET VALUE.	DUTIES.
1. Cottons, . . . . .	\$7,311,646.03	\$10,531,970.15	\$4,734,340.87
2. Groceries, . . . . .	3,437,525.43	5,191,788.62	2,012,509.30
3. Articles free from duty, . . . .	2,411,593.73	3,354,259.77	
4. Mercury, . . . . .	1,356,600.31	2,184,014.56	763,908.87
5. Miscellaneous, . . . . .	1,434,216.56	2,035,609.63	1,055,828.05
6. Linen and hemp, . . . . .	993,362.76	1,452,978.28	564,125.89
7. Wools, . . . . .	1,038,044.31	1,427,867.58	644,496.77
8. Mixtures, . . . . .	998,831.81	1,417,427.61	605,146.49
9. Silks, . . . . .	419,017.10	588,911.32	267,404.71
10. Earthenware, crystal, and glass	344,936.45	577,510.82	206,547.31
11. Drugs, . . . . .	173,852.32	300,069.05	131,011.38
	\$19,919,632.81	\$29,062,406.94	\$10,989,319.64

The value of goods exported amounts to \$31,473,607.24. The exports are arranged under two heads:

Minerals and metals, . . . . .	\$25,373,673.78
Agricultural and industrial products, . . . . .	6,317,477.06
Total, . . . . .	\$31,691,150.84

Under the first heading are:

Silver coin, . . . . .	\$22,602,493.33
Solid silver, . . . . .	1,512,616.94
Gold coin, . . . . .	640,270.97
Solid gold, . . . . .	288,578.21
Ores and mineral earths, . . . . .	222,854.00
Silver amalgam, . . . . .	39,251.78
Lead, . . . . .	30,831.00
Copper, . . . . .	17,137.94

## Under the second heading :

Skins, . . . . .	\$1,546,869.43
Henequen, . . . . .	1,049,202.58
Building and color woods, . . . . .	1,042,586.31
Coffee, . . . . .	532,912.86
Vanilla, . . . . .	414,038.40
Cochineal, . . . . .	276,699.30
Cattle, . . . . .	209,960.00
Tobacco, . . . . .	132,984.75
Orchilla ( <i>Rocella tintorea</i> ), . . . . .	128,450.09
Precious pearls, . . . . .	109,300.00
Caoutchouc, . . . . .	93,052.88
Sarsaparilla, . . . . .	90,862.18
Wool, . . . . .	88,635.72
Indigo, . . . . .	80,229.87
Jalap, . . . . .	77,517.40
Cocanuts, . . . . .	46,000.00

The revenue of the General Government and the expenses of the Federal Administration amount to a yearly average of 20,000,000 dollars.

There have been 8103 schools established by the Government for the primary instruction of the people. In eighteen of the States attendance has been made compulsory.

The official data in regard to secondary and higher instruction are condensed in the following figures relating to the institutions of these two degrees, maintained by the Mexican government:

26	Preparatory Schools.
18	Colleges of Jurisprudence.
12	" " Engineering.
11	" " Medicine.
9	" " Pharmacy.
2	" " Navigation.
2	" " Agriculture.
2	" " Mining.
2	Conservatories of Art.
3	" " Music.
15	Ladies' Colleges.

The above list does not include a large number of establishments conducted by the clergy, benevolent societies, or private teachers.

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Commission from MEXICO to the International Exhibition :

*Commissioners.*

MANUEL M. DE ZAMACONA.  
 MARIANO BARCENA.  
 ELENERIO AVILA.  
 MANUEL CORELLA, Attache.  
 AURELIO YBANEZ, Engineer.

EDITH BORZELL, Engineer.  
 LLUTARCO ORNELAS, Acting Sect'y.  
 FERNANDO CAMACHO, Employee.  
 J. LEON CALDERON, Employee.

## LIBERIA.

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THE Republic of Liberia is situated on the West Coast of Africa, between the fourth and eighth degrees of north latitude, and extends along five hundred and twenty miles of the coast, from the English colony of Sierra Leone to the mouth of the San Pedro River. Its most interior settlement is some thirty miles from the sea-board. The land has been purchased in an open and honorable manner from the aboriginal owners, and there is no obstacle to the acquisition of additional territory inland until the heart of the great continent is reached.

Immediately on the sea-shore the land is generally low, but very soon becomes elevated, rising in gentle undulations or swells. The whole country is well wooded and watered. Timber suitable for building purposes, cabinet-work, and shipbuilding is abundant, as is also good water.

All tropical productions are readily raised in Liberia, many of them the entire year, and dug from the earth every month for use. The Lima bean, tomato, and egg-plant are indigenous and of several varieties, and yield abundantly. Fruits grow in a wild state and under cultivation. Oranges are especially fine. Nowhere is a better quality of sugar-cane produced. Liberia coffee is the richest known, always commanding the highest market price. Cotton, ginger, ground-nuts, arrow-root, pepper, and indigo are mainly raised by the American settlers. Palm-oil, made by the natives, ivory, camwood, gums, and hides are valuable articles of commerce exported from Liberia. Horses are little used on the coast, but are plentiful in the interior. Cows, goats, hogs, ducks, turkeys, and fowls are abundant. The rivers abound in shell and other fish.

The climate is uniformly sultry and moist, but the heat is not excessive; the thermometer in the wet season stands at about 71°, and in the dry at about 82°.

A very great impulse is perceptible in Liberian industry during the last thirteen years. The greatest success has, however, resulted from a natural capacity for agriculture, which is growing rapidly and promises at an early day to make the whole territory a vast coffee grove. A very superior quality of iron ore is found in all parts of the country and worked by the natives, and will be of great use in manufacture and trade. Three years ago a volcanic eruption disclosed many valuable minerals.

The American Colonization Society, to which Liberia owes its origin, was founded in Washington, D. C., December 21st, 1816. It has given passage more or less every year for the last fifty-five years to 15,098 persons of color, and it induced the government of the United States to settle in Liberia 5722 recaptured Africans, making a grand total of 20,820 persons to whom the society has given homes in that republic. Monrovia, at the mouth of the river Mesurado, is the capital, and has about 7000 inhabitants.

Some 600,000 natives residing on the territory of Liberia live mostly in their own towns, subject to their own headmen and their own laws, yet amenable to Liberian authority and having all the protection and privileges of citizens. Not a few have become such and creditably fill various public offices, while all are gradually acquiring the arts, comforts, and conveniences of civilized life.

The last tabular statement issued shows the previous year's imports of Liberia to have reached \$209,423.88, and the exports \$171,351.47. Since then Edward S.

Morris & Co., of Philadelphia, Pa., have introduced improved and patented coffee-bulling machinery and a steamer, the first on the St. Paul's River, thus greatly stimulating not only the production and transportation of coffee, but other valuable articles, for export. They have also there begun the manufacture of palm-oil soap and indigo. The commercial statistics of Liberia would therefore, if presented now, appear far more advantageously.

There are two Liberia newspapers, the "Liberia Advocate" and the "Interior." The former aims to discuss principles and point facts that will be useful to the country in every particular; the other is especially devoted to assisting intercourse and amity with the strange interior tribes, most of whom can read, while all are anxious for an English education. By a law of Liberia all parents are required to send their children to school. In some of the settlements the schools are good. A college, the materials and erection of which cost \$20,000, is in operation at Monrovia. All the professors are colored men.

The State has good patent laws, hospitals, and saw-mills and lighthouses. All religious denominations are allowed, and there are several in each of the settlements. Quite a number of vessels have been built in the country and are owned, manned, and managed wholly by Liberians. Some of these have appeared in American and European ports loaded with Liberian and other African products.

The Constitution of Liberia very closely resembles that of the United States, and was adopted in convention on the 26th of July, 1847. The powers of government are vested in three departments, legislative, executive, and judicial. The legislative authority consists of a House of Representatives and a Senate, each of which has a negative on the other. The election of representatives is for two years. Two members from each county constitute the Senate, and are elected for four years. The executive power is vested in a President, chosen every two years. He is commander-in-chief of the army and navy, and makes treaties, two-thirds of the Senate concurring. With the advice and control of the Senate he appoints all public officers for whose appointment special provision is not made by law. There is also a Vice-president elected in the same manner, who is president of the Senate. The judicial power is placed in a Supreme Court and such subordinate courts as the legislature may from time to time establish.

Among the miscellaneous provisions of this Constitution is the following: "Section 13. The great object of founding these colonies being to provide a home for the despised and oppressed children of Africa, and to regenerate and enlighten that benighted continent, none but persons of color shall be admitted to citizenship in the republic."

Liberia has an earnest hope that this exhibition of her products will attract the attention of colored Americans and draw the large immigration needed. The country needs this more than anything else, and with it could be powerful and rich in ten years.



## SPAIN.

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SPAIN occupies the larger portion of the great peninsula which forms the south-east corner of the European continent, reaching farther south than any other European country, and farther west than any except Portugal. It is bounded on the north by the Bay of Biscay and by France, from which it is separated by the mountain ridge of the Pyrenees, on the east and south by the Mediterranean and Atlantic, and on the west by the Atlantic and Portugal. Greatest length, from Fuenterrabia on the north to Tarifa on the south, 560 miles; greatest breadth, from Cape Finisterre (Land's End), the extreme point on the west, to Cape Creuze, the extreme point on the east, about 650 miles; average breadth about 380 miles. Area, including the Balearic and Canary Isles, 196,031 English square miles; population (1870), 16,835,506. The country, including the Balearic and Canary Isles, was divided, in 1834, into 49 modern provinces, though the former division, into 14 kingdoms, states, or provinces, is still sometimes used.

The entire perimeter of the country is 2080 English miles, and the coast line, exclusive of windings, is 1317 miles long, of which 712 miles are formed by the Mediterranean, and 605 miles by the Atlantic. The north coast, from Fuenterrabia west to Cape Ortegal, is unbroken by any considerable indentation. A wall of rocks, rising in height from 30 to 300 feet, runs along this shore; but the water, which attains considerable depth close to the beach, is not interrupted to any unusual extent by islands or rocks. The northwest coast, from Cape Ortegal south to the mouth of the river Minho—which separates the Spanish province of Galicia from Portugal—though rock-bound, is less elevated, and is much more broken than the shores washed by the Bay of Biscay; and the indentations, the chief of which are the Rias Arosa and Vigo Bays, form secure and spacious harbors. From the mouth of the Guadiana, on the south, to the Strait of Gibraltar, the coast line, though well defined, is low, sandy, and occasionally swampy. From Gibraltar to Cape Palos the shores, which are backed in part by the mountain range of the Sierra Nevada, are rocky and high (though flats occur at intervals), are unbroken by indentations, and comprise only two harbors, those of Cartagena and Malaga. A low, and for the most part sandy, coast extends north from Cape Palos, rising into rocky cliffs and bluffs in the vicinity of Denia, but extending in sandy flats from Denia to the mouth of the Ebro. From the mouth of this river north to the frontier of France the coast is alternately high and low, and its principal harbors are Barcelona and Sagunt. The compactness and the isolation of this country, and its position between the Mediterranean and Atlantic seas, the most famous and commercially the most important in the world, are more in its favor than the character of its surface, which is more diversified than that of any other country in Europe of equal extent. An immense plateau, the largest in the continent, occupies the central regions of Spain, and is bounded on the north and west by mountainous tracts, and on the northeast by the valley of the Ebro; on the east by tracts of land frequently low, but in some parts traversed by mountain ranges; on the south by the valley of the Guadalquivir, which intervenes between it and the Sierra Nevada. This great plateau rises to the height of from 2000 to 3000 feet, and occupies upward of 90,000 square miles, or about half of the entire area of the country. The whole of the Pyrenean peninsula is divided by Spanish geographers into seven mountain ranges, of which the chief are: 1. The Iberian mountains and the Pyrenees, forming the most northern range; 2. The

Sierra de Guadarrama, separating Leon and Old Castile from Estremadura and New Castile, and rising in the peak of Penalara 7764 feet above sea level; 3. The Montes de Toledo, forming a part of the water-shed between the Tagus and the Guadiana; 4. The Sierra Morena, between the upper waters of the Guadiana and Guadalquivir; 5. The Sierra Nevada, running parallel with the shores of the Mediterranean, through Southern Murcia and Andalucia, and rising in its chief summit to loftier elevations than are found in any mountain system of Europe except that of the Alps. The several mountain ridges, or as they are called Cordilleras, of Spain have a general east and west direction, and between them run, in the same direction, the nearly parallel valleys or basins of the great rivers of the country, the Douro, Tagus, Guadiana, and Guadalquivir, each of which is described in its proper place.

The climate of Spain, owing to extent and configuration of the country, is exceedingly various. In the northwest (maritime) provinces it is damp and rainy during the greater part of the year; at Madrid, which is situated about  $11^{\circ}$  south of London, and only  $5^{\circ}$  north of the shores of Africa, winters have occurred of such severity that sentinels while on duty have been frozen to death, while the south and east provinces are warm in winter, and are exposed to burning winds from the south, and to an almost tropical heat, in summer. Both ancient and modern geographers have adopted difference of climate as the rule for dividing the peninsula into tracts distinct as well in soil and vegetation as in temperature. Of these tracts or zones the first and most northern may be considered as embracing Galicia, Asturias, the Basque Provinces, Navarre, Catalonia, and the northern districts of Old Castile and Aragon. In this tract the winters are long and the springs and autumns rainy, while north and northeast winds blow cold from the snow-covered Pyrenees. The middle zone is formed mainly by the great central plateau, and embraces Northern Valencia, New Castile, Leon, and Estremadura, with the south parts of Old Castile and Aragon. The climate of the great part of this region is pleasant all in spring and autumn. The soil is generally fertile, and corn and wine are not abundantly produced. The southern or Bætican zone, comprising the rich country that extends between the southern wall of the central plateau and the Mediterranean shores, includes Andalucia, Murcia, and Southern Valencia. The stony ramparts of the north protects it from the chilly winds of the central zone; but it is unprotected against the hot winds which in summer blow north from Africa and render the season intolerable to northern Europeans. Here the winter is temperate, and the spring and autumn delightful beyond description. The soil, which is artificially irrigated, is well adapted to agriculture and the cultivation of heat-loving fruits. The products comprise sugar, cotton, and rice, and the orange, lemon, and date.

The vast mountains of the country, affording, for the most part, only scanty cover of herbage, are utilized as pasture-grounds and are divided into large farms. In the warm and fertile plains, especially where water is abundant, the farms are small. In 1860 there were 3,426,083 farms of all sizes, of which 750,000 were occupied by tenants, and the others by proprietors.

The cotton manufactures of Spain have been making considerable progress, and silk stuffs are largely fabricated. The principal cotton factories are at Barcelona. Excellent paper is made at Tolosa and Valladolid, and in the last-named town there are a few minor manufactures. The manufactures of tobacco, arms, and gunpowder are carried on by the government exclusively. Though neither the agricultural nor mineral resources of Spain are properly developed, a great advance has been evident within the last ten years, chiefly in mining, and more especially so in the working of lead and copper mines. Lead, copper, and tin are abundant, and there are large deposits of good coal and iron ore. The quicksilver mines of Almaden have been long celebrated and are still worked.

The merchant navy consisted in 1873 of 3069 vessels, of a total burden of 673,531 tons. Of these 202 were steam-vessels, 138,670 tons burden. The imports during

the year 1874 amounted to 382,000,000 pesetas,\* the exports to 403,000,000 pesetas. The principal imports are sugar, yarn, woolen fabrics, raw cotton, iron, machinery, soals, and dried fish; the principal exports are wine, metals, dried fruit, flour, bullion, green fruits, olive-oil, minerals, wool, grain, vegetation, and seeds, cork, and salt.

At the end of 1875 Spain had no constitution, but it was resolved by the government of King Alfonso XII. that a charter should be drawn up by a Cortes Constituyentes, to be called together in the spring of 1876. As a preliminary measure a committee of senators and deputies of the last Cortes, dissolved in 1874, had been called together July, 1875, at Madrid, which meeting resulted in the production of a constitutional scheme which was adopted by the government, and from which are spring the future fundamental laws of Spain. The projected constitution provides that the power to make laws shall reside "in the Cortes with the king," and that the Cortes shall be composed of a Senate and Congress equal in faculties.

The various provinces of Spain, districts and communes, are governed by their own municipal laws, with strongly pronounced local administration. Neither the national executive nor the Cortes have the right to interfere in the established municipal and provincial self-government, except in case the action of the provincial parliaments or municipal councils (ayuntamientos) goes beyond the locally limited sphere to the injury of general and permanent interests.

The public debt, June 1, 1874, was 10,120,285,220 pesetas; the estimated public receipts for the financial year 1874-75, 609,541,141; estimated expenditures for the same year, 605,125,569. The army statistics are as follows:

	ON A PEACE FOOTING.	ON A WAR FOOTING.
Infantry, . . . . .	56,000	178,000
Cavalry, . . . . .	10,900	10,900
Artillery, . . . . .	9,300	11,900
Engineers, . . . . .	2,200	2,200
Carabineers, . . . . .	13,000	13,000
Totals, . . . . .	91,400	216,000

The navy consists of 123 steam-vessels, carrying 755 guns and aggregating 21,161 horse-power. Besides these, there are 3 school-ships, carrying 54 guns, and 2 sailing-vessels. The Spanish fleet is manned by 14,000 seamen and 5500 marines.

The length of railways in operation January, 1875, was 3810 English miles, and 1264 English miles were in course of construction. The whole of the Spanish railways belong to private companies, but nearly all have obtained guarantees or subventions from the government.

The post-office carried 75,300,000 letters in the year 1874. There were 2365 post-offices on the 1st of January, 1875.

The length of lines of telegraph on the 1st of January, 1875, was 7510 English miles, and the total length of wires 16,950 English miles. In the year 1874 the number of messages was 937,845.

#### COLONIES.

	AREA IN ENGLISH SQ. MILES.	POPULATION.
<b>AMERICA.</b>		
Cuba, . . . . .	43,225	1,400,000
Puerto Rico, . . . . .	3,544	625,000
<b>ASIA.</b>		
Philippine Islands and adjacent archipelago .	66,423	6,034,410
<b>AFRICA.</b>		
Fernando Po, Annobon, etc., . . . . .	483	35,000
Total, . . . . .	113,675	8,094,410

\* The peseta = 19.3 cents.

The following figures show the production of sugar and molasses and amount exported from Cuba during the year 1873:

	PRODUCTION.	EXPORTED.
Sugar, . . . . .	796,179 tons.	714,960 tons.
Molasses, . . . . .	242,308 "	189,333 "
Total, . . . . .	1,038,487 "	904,293 "

About two-thirds of the sugar and about nine-tenths of the molasses are sent to the United States.

The exports from the port of Havana during the year 1873 included 1412 tierces of honey, 19,574 pipes of rum, 46,216 lbs. of wax, 13,387,652 lbs. of tobacco, and 224,765,000 cigars. The number of vessels entered at the port of Havana during 1873 was 2194, with a total tonnage of 921,632.

During the same year Porto Rico exported 2,032,913 quintals of sugar, 6,082,539 gallons of molasses, 270,895 quintals of coffee, 51,766 quintals of tobacco, 244 quintals of cotton, and 32,782 gallons of rum.

The exports of the Philippine Islands are principally sugar, hemp, tobacco, cigars, and coffee, and amounted in 1873 to 15,216,000 pesos.\*

(The above statistics were furnished in part by the Spanish Commission.)

#### Commission from SPAIN to the International Exhibition :

COLONEL F. LOPEZ FABRA, Royal Commissioner-General.

COLONEL JUAN J. MARIN, Engineer Corps, Royal Spanish Commissioner.

DON JOAQUIN OLIVER, Secretary.

DON ALVARO DE LA GANDARA, Director of the Industrial Department.

COUNT DEL DONADIO, Director of the Department of Fine Arts.

DON JOSE JORDANA Y MORERA, Director of the Agricultural Department.

DON JUAN MORPHY, Consul-General of Spain, Member of the Commission.

DON JULIAN A PRINCIPE, Vice-Consul, Attache.

DON MIGUEL GONZALEZ, Attache.

DON JOSE FONRODONA, Attache.

#### *Chiefs of Bureaus.*

DON ENRIQUE BROTONS.

DON ENRIQUE BORRELL.

DON ALFREDO ESCOBAR.

#### *Chiefs of Installation.*

DON BERNARDO FORZANO.

DON FRANCISCO FORZANO.

DON FRANCISCO PARODY, Interpreter.

\* The peso = 92½ cents.

# PORTUGAL.

PORTUGAL, the most westerly kingdom of Europe, is a part of the great Spanish peninsula, and lies in  $36^{\circ} 55'$  to  $42^{\circ} 8' N.$  lat., and  $6^{\circ} 15'$  to  $9^{\circ} 30' W.$  long. Its greatest length from north to south is 368 miles, and its average breadth from east to west about 100 miles. It is bounded by the Atlantic on the south and west, and by Spain on the north and east.

Portugal is divided into six provinces, the area of which and population, according to the last census (1868), is given in the subjoined table:

PROVINCES.	AREA IN ENGLISH SQ. MILES.	POPULATION.
Minho, . . . . .	2,671	988,985
Tras-os-Montes, . . . . .	4,065	370,144
Beira . . . . .	8,586	1,288,994
Estremadura, . . . . .	8,834	837,451
Alemtejo, . . . . .	10,255	332,237
Algarve, . . . . .	2,099	177,342
	<hr/> 36,510	<hr/> 3,995,153

The insular appendages of Portugal are, the Azores, 1133.79 sq. miles, pop. (1868) 252,480; Madeira, etc., 330.75 sq. miles, pop. 113,341. The total area of the home possessions of Portugal is, therefore, 37,510.83 sq. miles, and the population 4,360,974.

Portugal must be regarded as essentially a littoral country, forming the Atlantic or western part of the Spanish peninsula, from which it is separated by political rather than physical boundaries. Its mountains and rivers are, with few exceptions, mere western prolongations of those of Spain. The principal mountain ranges lie about halfway inland, leaving almost the whole of its 500 miles of coast-line a flat sandy tract, with few rocky headlands, and hence there are scarcely any harbors or places of safe anchorage, except at the embouchures of the larger rivers. The highest range is the Serra de Estrella, which, passing from north-north-east to south-south-west, through Beira and Estremadura, terminates in the steep acclivities of Cintra and Cap la Roeca, near Lisbon. The principal chain, which is also known as the Serra da Junta, merges in a series of ridges, which cover a tract thirty miles in length between the Tagus and the sea. Another mountain range, named the Serra de Caldeiao and the Serra de Monchique, but constituting a mere continuation of the Spanish Sierra Morena, crosses the southern part of Portugal from east to west, and terminates in its most southern promontory of Cape St. Vincent. These ranges, with the numerous mountain-spurs that intersect the northern districts in every direction, so thoroughly occupy the area of Portugal that there are only two or three plains of any extent in the whole country, and these are situated to the west of the Guadiana, in Alemtejo, and in Beira and Estremadura, near the Tagus and Vouga. The valleys are very numerous, and by their great fruitfulness present a striking contrast to the barren and rugged mountains by which they are enclosed. The principal rivers enter Portugal from Spain. Of these, the largest are the Guadiana, which, leaving Spain near Badajoz, forms in part the boundary between the southern provinces of the neighboring kingdom, while the Minho and Douro, flowing west, form a part of the boundary in the north and north-east. The Tagus, or Tejo, intersects Portugal from its northern frontier to the southern termination of the Estrella Mountains, where it enters the sea a little below Lisbon. The Mondego, the largest river belonging entirely to Portugal, after receiving numerous affluents in its course, falls into the sea about midway between the Douro and the Tagus. The larger rivers, although obstructed at their mouth with dangerous bars, afford admirable means of internal navigation, together with the numerous lesser streams, and might through

canals be connected into one great system of water routes; but hitherto nothing has been done to improve these great natural advantages. Except a few mountain tarns, Portugal has no lakes. It has salt marshes on the coast near Setubal, in Estremadura, and Aveiro, in Beira, whence large quantities of salt are annually obtained by evaporation. Mineral springs are abundant in many parts of the country, but hitherto they have been almost wholly neglected.

The vicinity to the western ocean tempers the climate of Portugal and exempts it from the dry heat by which Spain is visited. The great inequalities of the surface produce, however, great diversities of climate; for while snow falls abundantly on the mountains in the northern provinces, it is never seen in the lowlands of the southern districts, where spring begins with the new year and harvest is over by mid-summer. Rain falls abundantly, especially on the coast, from October to March, and as a general rule the climate is healthy in the elevated districts even of the southern provinces; but malaria and fever prevail in low, flat lands and near the salt marshes. The mean annual temperature at Lisbon is 61° Fahr.

The natural products correspond to the diversity of the physical and climatic conditions; for while barley, oats and wheat, maize, flax, and hemp are grown in the more elevated tracts, rice is cultivated in the lowlands, the oak thrives in the northern, the chestnut in the central, and the cork, date, and American aloe in the southern parts, while every species of European and various kinds of semi-tropical fruits and vegetables are grown in different parts of the country. The soil is generally rich, but agriculture is everywhere neglected, and is scarcely made subservient to the wants of the population. The cultivation of the vine and that of the olive are almost the sole branches of industry; from the former is derived the rich red wine familiarly known to us as Port, from its being shipped at *O Porto*, "the port." The mineral products include gold, antimony, lead, copper, marble, slate, coal, iron, and salt, but of these the last is alone worked in sufficient quantity for exportation, and is in eager demand for the British market on account of its superior hardness, which adapts it specially for the salting of meat for ships. The commercial industry of the country falls very far below its physical capabilities, and Oporto and Lisbon are the only centres of manufacture and trade, the former of which has important silk and glove manufactories, and produces an inconsiderable quantity of linen, cotton, and wool fabrics, metal and earthenware goods, tobacco, cigars, leather, etc.

The external trade of Portugal is as follows: Imports 34,047,000 milreis, exports 23,609,000 milreis. (The milreis equals \$1.08 in gold.)

The commercial navy of Portugal consisted on the 1st of January, 1872, of 813 vessels, of a total burden of 88,510 tons.

The fundamental law of the kingdom is the "Carta Constitucional," granted by King Pedro IV. April 29th, 1826, and altered by an additional act, dated July 5th, 1852. The crown is hereditary in the female as well as male line, but with preference of male in case of equal birthright. The constitution recognizes four powers in the state, the legislative, the executive, the judicial, and the "moderating" authority, the last of which is vested in the sovereign. There are two legislative chambers, the "Camera dos Pares," or House of Peers, and the "Camera dos Deputados," or House of Commons, which are conjunctively called the Cortes Geraes. The peers, unlimited in numbers, but actually comprising 133, are named for life by the sovereign, by whom also the president and vice-president of the first chamber are nominated. The members of the second chamber are chosen in direct election by all citizens having a clear annual income of 133 milreis. The deputies must have an income of at least 390 milreis, but lawyers, professors, physicians, or the graduates of any of the learned professions need no property qualification. Continental Portugal is divided into ninety-four electoral districts, returning as many deputies. The General Cortes meet and separate at specified periods, without the intervention of the sovereign, and the latter has no veto on a law passed twice by both Houses. All laws

relating to the army or general taxation must originate in the Chamber of Deputies. The executive authority vests, under the sovereign, in a responsible ministry.

The budget of the financial year 1875-76 gives the estimated revenue at 23,152,000 milreis, and the expenditure at 24,129,000 milreis.

About one-half of the total liabilities of Portugal rank as an external debt, contracted for mainly in Great Britain, the rest being a home debt. The entire public debt amounted November 30, 1873, to £72,833,000. The army, in time of peace, numbers 31,826 men.

The navy of Portugal comprised, at the end of 1875, 21 steamers and 11 sailing-vessels, most of the latter laid up in harbor. The steamers comprise 9 corvettes, 8 sloops, and 7 gunboats, with a total of 170 guns and 4906 horse-power. The navy is officered by 1 vice-admiral, 5 rear-admirals, and 31 captains, and manned by 3493 sailors and marines.

The total length of railways in Portugal at the commencement of 1875 was 523 English miles. All the railways receive subventions from the state.

The number of post-offices in the kingdom at the beginning of 1872 was 599, and the number of telegraph offices 121. There were at the same time 1944 miles of telegraph lines. The number of telegrams despatched in the year 1871 was 698,700, nearly one-fifth for foreign countries. An international service by submarine cables was opened June 11, 1870.

Public education is entirely free from the supervision and control of the Church. By a law enacted in 1844 it is compulsory on parents to send their children to a place of public instruction, but this prescription is far from being enforced.

There are at present—

Scientific establishments for higher education, . . . . .	9
For secondary education, . . . . .	19
Elementary schools, . . . . .	2445
For especial instruction, . . . . .	6

2479

The sum voted in 1875 for public instruction amounted to 902,730 milreis. The sum expended by private persons is estimated at about 300,000 more.

#### *Colonies.*

The colonial possessions of Portugal, situated in Asia and Africa, embrace a total area of 713,225 English square miles, or 34,820 geographical square miles. The latest official returns, based mainly on estimates, state the area and population as follows:

	AREA IN GEOG. SQ. MILES.	POPULATION.
<b>1. POSSESSIONS IN ASIA:</b>		
Settlements at Goa, Salcete, etc., . . . . .	68.60	474,233
" Damas and Diu, . . . . .	7.45	53,284
Indian Archipelago, . . . . .	260.	850,300
Macao, . . . . .	.56	100,000
Total Asia, . . . . .	336.61	1,477,817
<b>2. POSSESSIONS IN AFRICA:</b>		
Cape Verde Islands, . . . . .	77.64	67,347
Settlements in Senegambia and Guinea, . . . . .	1,687.	8,500
Islands of St. Thomas and Principe, . . . . .	21.36	19,295
Angola, Benguela, and Mossamedas, . . . . .	14,700	2,000,000
Mozambique and Sofala, . . . . .	18,000	300,000
Total Africa, . . . . .	34,486	2,395,142
Total Possessions, . . . . .	34,822	3,872,959

Although of small extent, the Cape Verde Islands are estimated as the most important colonial possession of Portugal, politically and commercially. There are nine principal or inhabited islands that form the archipelago of the Cape de Verdes. Five of these islands—viz., St. Nicholas, Bona Vista, San Antonio, St. Vincent, and Sal—compose the Windward, and the four remaining islands—St. Jago, Fogo, Brava, and Maio—the Leeward, group. The island of St. Vincent, 70 English square miles in extent, but with not more than 1700 inhabitants, is possessed of a deep and excellent harbor, affording a secure anchorage at all seasons for vessels of the largest size. In the year 1871 there entered St. Vincent harbor 317 vessels of all nations. These islands, being in the direct route of European steamers bound to the coast of Brazil, the river Plate, and the west coast of South America, are of great value as affording a convenient resting-place for coaling and renewing provisions and water.

By the terms of a law passed by the Cortes Geraes of Portugal in 1858, domestic slavery is to cease in all the Portuguese colonies and settlements on the 29th of April, 1878.

#### Commission from PORTUGAL to the International Exhibition :

The preliminary works of the International Exhibition of Philadelphia were committed by the Portuguese Government to different corporations, these being helped by the authorities of the country.

#### EXECUTIVE COMMITTEES IN PORTUGAL.

##### DEPARTMENT I.

*Bureau of Mines.* JOAO BAPTISTA SCHIAPPA D'AZEVEDO, Chief.

##### *Mining Engineers.*

JOAO FERREIRA BRAGA.  
LOURENCO MALHEIRO.

FRANCISCO FERREIRA ROQUETTE.  
PEDRO VICTOR DA COSTA SEQUEIRA.

##### DEPARTMENTS II., III., IV., AND V.

Committee of the Society for the Encouragement of Manufacturing Industry.

ANTONIO AUGUSTO D'AGUIAR, Director of the Industrial Institute of Lisbon,  
President.

DANIEL CORDEIRO FEIO.

JOAQUIM MOREIRA MARQUES.

MANUEL DE CARVALHO RIBEIRO VIANNA.

IZIDORO THOMAZ DE MOURA CARVALHO.

MANUEL GOMES DA SILVA.

JOSE CAETANO D'ALMEIDA NAVARRO.

ANTONIO ADRIANO DA COSTA.

FIRMINO SEIXAS.

FRANCISCO JOSE LOPES FERREIRA.

MATHEUS FERREIRA.

ANTONIO DOS SANTOS MIGUEIS.

JULIO JOSE PIRES.

HENRIQUE PEREIRA TAVEIRA.

##### AT OPORTO.

GUSTAVO ADOLPHO GONCALVES E SOUZA, Director of the Industrial Institute of Oporto.

##### DEPARTMENTS VI. AND VII.

Committee of the Royal Central Society of Portuguese Agriculture.

VISCOUNT OF CARNIDE, President.

MANUEL JOSE RIBEIRO.

CAETANO DA SILVA LUZ.

JAYME BATALLA REIS.



ALFREDO DE QUEIROZ GUEDES, Treasurer.  
 LUIS AUGUSTO MARTINS D'ANDRADE, Secretary.  
 Committee of the Agricultural Society of Oporto.  
 BENTO DE FREITAS SOARES, President.  
 BARON OF ROEDA.  
 VISCOUNT OF VILLARINHO DE S. ROMAO.  
 VISCOUNT OF VILLAR ALLEN.  
 CONSTANTINO VANZELLER.  
 AERNALDO AMANDIO PEREIRA DE FARIA.  
 ALFREDO CARLOS LE COCQ.  
 JOAQUIM TAIBNER DE MORAES, Secretary.

COMMISSION IN PHILADELPHIA.

BARON OF SANT' ANNA, Royal General Commissioner.

DEPARTMENTS I., II., III., IV., AND V.

LOURENCO MALHEIRO, Commissioner.  
 ANTONIO JOSE ANTUNES NAVARRO.  
 FORGE CANDIDO BERKELEY COTTER.  
 THOMAZ VICTOR DA COSTA SEQUEIRA.

DEPARTMENTS VI. AND VII.

JAYME BATALHA REIS, Commissioner.  
 ALFREDO CARLOS LE COCQ.  
 MEM RODRIGUES DE VASCONCELLOS.  
 CAETANO OLYMPIO ROVERE.

## TURKEY.

TURKEY, or the Ottoman Empire, includes large portions of the continents of Europe, Asia, and Africa, and consists of Turkey Proper, which is under the direct rule of the sultan, and of numerous dependent and tributary states, governed by their own princes. Turkey Proper is partly in Europe and partly in Asia, and is divided into a number of provinces, or *eyalets*.

The total area of the empire comprises 1,812,048 square miles, divided as follows:

	AREA.	POPULATION.
Turkey in Europe, . . . . .	207,438	9,800,000
" " Asia, . . . . .	660,870	16,750,000
" " Africa, . . . . .	943,740	600,000
	1,812,048	27,150,000

The states dependent upon Turkey are either subject to hereditary chiefs—as in Egypt, Servia, and Montenegro—to elective rulers, or to viceroys appointed by the Sultan; and these chiefs, of whatever sort, must, on their accession, be approved of by the sultan, must acknowledge his suzerainty, and pay tribute; in all other respects they are on the footing of independent rulers.

Turkey Proper, as the immediate possessions of the sultan are called, is bounded by the Austrian dominions, Roumania, and the Black Sea on the north; by Persia, the Persian Gulf, and the Arabian Desert on the east; and by the Red Sea and its outlet, Egypt, the Mediterranean, Greece, the Adriatic Sea, and the Austrian empire on the south and west.

Turkey in Europe, the smaller of the two divisions of Turkey Proper, is generally hilly and undulating, traversed by a mountain system which has its origin in the Alps, whose eastern extension, the Julian Alps, enters the country at its north-west corner, runs in a south-west direction as the Dinaric Alps, keeping parallel to the coast-line, and after entering Albania, where it becomes Mount Pindus, assumes an almost southern direction till it reaches the Greek frontier. This range, which forms the water-shed between the Adriatic and Ægean Seas, has its culminating point in Mount Dinara (7458 feet), and sends out numerous offshoots over Montenegro and Albania.

The great river of Turkey is the Danube, which, with its tributary, the Save, forms the northern boundary, and receives in Turkey the Bosna and Drin from Bosnia, the Morava from Servia, and the Isker and Osma from Bulgaria. The Maritza, whose basin is formed by the Great Balkan and its two south-eastern branches, and the Strumo and Vardar, in Macedonia, are also considerable rivers, but those which are situated to the west of the Dinaric-Pindus range are, from the proximity of that water-shed to the sea-coast, insignificant in size; chief of them are the Narenta, Drin, and Voyutza. The Primitive rocks predominate in Macedonia, the Secondary group in the western provinces and to the north of the Balkan, and Tertiary deposits in the basins of the Save and Maritza, and in Suli.

On the high lands the cold is excessive in winter, owing to the north-east winds, which blow from the bleak and icy steppes of Southern Russia; and the heat

of summer is almost insupportable in the western valleys. Violent climatic change is, on the whole, the rule in European Turkey; but those districts which are sheltered from the cold winds, as the Albanian valleys, enjoy a comparatively equable temperature. Although the soil is for the most part very fertile, but little progress has been made in the art of agriculture, and the most primitive implements are in common use. The cultivated products are maize in the south; rice, cotton, rye, barley in the centre, and millet in the north; the natural products are the pine, beech, oak, lime, and ash, with the apple, pear, cherry, and apricot in the Danube basin; the palm, maple, almond, sycamore, walnut, chestnut, carob, box, myrtle, laurel, etc., in the provinces south of the Balkan; large forests of fir and pine in the north-west; the olive, orange, citron, vine, peach, plum, and other fruit trees in Albania; and abundance of roses in the valley of the Maritza. The mineral products are, iron in abundance, argentiferous lead ore, copper, sulphur, salt, alum, and a little gold, but no coal. The wild animals are the wild boar, bear, wolf, wild dog, civet, chamois, wild ox, and those others which are generally distributed in Europe. The lion was formerly an inhabitant of the Thessalian Mountains.

**TURKEY IN ASIA.**—This portion of the Turkish Empire is more hilly than the other; the two almost parallel ranges Taurus and Anti-Taurus, which are the basis of its mountain system, cover almost the whole of the peninsula of Asia Minor or Anatolia, with their ramifications and offshoots, forming the surface into elevated plateaux, deep valleys, and enclosed plains. From the Taurus chain the Lebanon range proceeds southward parallel to the coast of Syria, and diminishing in elevation in Palestine terminates on the Red Sea coast at Sinai. Besides the Euphrates, Tigris, and Orontes, the only important rivers of Turkey in Asia are the Kizil-Ermak, which rises on the borders of Cilicia, and after a devious course across the peninsula falls into the Black Sea near Samsoun; the Mæander and Sarabat, which flow to the Ægean; and the Sakaria, which empties itself into the Euxine. On the whole, Turkey in Asia is ill-supplied with water; and though the mountain slopes afford abundance of excellent pasture, the plains and many of the valleys, especially those of the Euphrates, Tigris, and Jordan, are reduced by the parching droughts of summer to the condition of sandy deserts.

The fertile portions produce abundance of wheat, barley, rice, maize, tobacco, hemp, flax, and cotton; the cedar, cypress, and evergreen oak flourish on the mountain slopes; the sycamore and mulberry on the lower hills; and the olive, fig, citron, orange, pomegranate, and vine on the low lands. The mineral products are iron, copper, lead, alum, silver, rock salt, coal (in Syria), and limestone. The fauna includes the lion (east of the Euphrates), the hyena, lynx, panther, leopard, buffalo, wild boar, wild ass, bear, wolf, jackal, jerboa, and many others; and the camel and dromedary increase the ordinary list of domestic animals.

Notwithstanding the primitive state of agriculture in Turkey, the extreme fertility of the soil, which returns from twenty-five fold to one hundred fold, makes ample amends for this defect, and supplies materials for the comparatively unimportant manufactures and industries of the country. The products are wax, raisins, dried figs, olive oil, silks, red cloth, dressed goat-skins, excellent morocco, saddlery, swords of superior quality, shawls, carpets, dye-stuffs, embroidery, essential oils, attar of roses, plum brandy, etc. The commerce of Turkey is extensive and important, and under the influence of judicious regulations is rapidly increasing. Detailed statistics are not obtainable. The average annual value of the imports of Turkey in Europe is estimated at £18,500,000; and of the exports at £10,000,000. The exports are the surplus of the above-mentioned natural and manufactured products of the country, also wool, goats' hair, meerschaum clay, honey, sponges, drugs, madder, gall-nuts, various gums and resins, and excellent wines; the imports are manufactured goods of all kinds, glass, pottery, arms, paper, cutlery, steel, amber, etc.

The merchant navy included, in 1873, 221 sailing-vessels of a total burden of

34,711 tons, and 9 steamers, aggregating 3049 tons. The total tonnage of the merchant navy is estimated at 180,000.

The sovereign is commonly styled sultan, but has also the titles padishah, grand seignior, khan, and hunkiar; though nominally absolute, his power is much limited by the *sheikh-ul-islam*, the chief of the *Ulemas*, who has the power of objecting to any of the sultan's decrees, and frequently possesses more authority over the people than his sovereign. The supreme head of the administration, and the next in rank to the sultan, is the grand vizier (*sadri-asam*), under whom are the members of the cabinet or divan (*menarybi-divaniie*), namely, the presidents of the supreme council of state (*alhiami-adlie*) and of the Tanzimat, the *Seraskier*, the *capudan pasha*, or high-admiral, and the other heads of departments of the administration. The governors of the *eyalets*, or provinces, are styled *walis*; each *eyalet* is divided into *sanjaks* or *livas*, ruled by *kaimakams*, each *liva* containing a number of *casas*, or districts, and each *caza* a number of *nahiye*s, composed of villages and hamlets.

According to the budget for 1875-76 (the year 1291, according to the Turkish calendar), the estimated public revenue was 4,776,588 purses\* of 500 piastres each; the expenditure, 5,785,819 purses. The foreign debt of Turkey amounted in 1875 to £184,981,783; the internal and floating debt has been estimated variously at from £13,000,000 to £30,000,000.

The military forces of Turkey were officially estimated as follows in 1875: on a peace footing, 157,667 men; on a war footing, 586,100.

The navy consisted at the end of 1875 of 20 iron-clad ships and 70 other steamers. In addition to these there were 4 steam transports and a number of old sailing-vessels not fit for service. The total length of railways open for traffic on January 1st, 1875, was 825 English miles, of which 654 were in Europe and 171 in Asiatic Turkey. The length of telegraph lines on the 1st of January, 1875, was 17,597 miles. The total number of despatches carried in the year 1874 was 910,130, of which number 102,987 were international messages.

Education was long neglected, but in 1847 a new system was introduced; and since then schools for elementary instruction have been established throughout Turkey, and middle schools for higher education and colleges for the teaching of medicine, agriculture, naval and military science, etc. In 1870, Constantinople had 415 public schools, which were attended by 24,000 pupils.

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#### Commission from TURKEY to the International Exhibition:

HIS EXCELLENCY G. D'ARISTARCHI BEY, Minister Plenipotentiary, President.

BALTAZZI EFFENDI, First Secretary of Legation.

RUSTEM EFFENDI, Second Secretary of Legation.

COUNT DELLA SALA, Acting Consul of Turkey.

MR. EDWARD SHERER.

MR. AUGUSTE GIESE, Honorary Member.

\* One purse of 300 piastres = \$25, gold.

# RUSSIA.

THE empire of Russia, extending over a large proportion of the northern regions of the globe, includes the eastern part of Europe, the whole of Northern Asia, and a part of Central Asia. Lat.  $38^{\circ} 30'$  to  $78^{\circ}$  N.; long.  $17^{\circ} 19'$  E. to  $190^{\circ}$  E. ( $170^{\circ}$  W.). Russia is bounded on the N. by the Arctic Ocean; on the E. by the Pacific Ocean; on the S. by the Chinese Empire, Turkestan, Caspian Sea, Persia, Asiatic and European Turkey, and the Black Sea; on the W. by Austria, Prussia, the Baltic, and Sweden.

The following table, showing the area and population of the Russian empire, is from the *Almanach de Gotha* for 1876:

	AREA IN SQUARE KILOMETRES.	POPULATION.
Russia, . . . . .	4,909,194	65,704,559 (1870)
Poland, . . . . .	127,316	6,026,421 (1870)
Grand Duchy of Finland, . . . . .	373,536	1,832,138 (1872)
Lieutenancy of Caucasus, . . . . .	447,645	4,893,332 (1871)
Siberia, . . . . .	12,500,083	3,428,867 (1870)
Central Asia, . . . . .	3,307,953	5,800,628
Total, . . . . .	21,665,727	87,685,945

The northern shores of the Russian territories, which are washed by the Arctic Ocean, are deeply indented. The White Sea, an immense arm of the Arctic Ocean, penetrates 350 miles into the mainland, and is subdivided into the gulfs of Onega and Archangel or Dwina. The other chief inlets on the north of Russia are the Kara Sea and the gulfs of Obi and Yenisei. Westward from Nova Zembla the Arctic Ocean is navigable for three months of the year; east from that island the sea, even at the mildest season, is encumbered with floating icebergs. The chief islands in this ocean are the Kolguef, Waigatz, Nova Zembla, and Spitzbergen isles. The eastern shores of Russia are washed by the Pacific, subdivided into the Behring, Okhotsk, and Japan Seas, and the islands belonging to this country in these seas are Sakhalin and the northern part of the Kuriles. On the south are the Black Sea and the Sea of Azov, the latter communicating with the former by the Strait of Kertch, and so shallow that it is navigable for small craft only. Of the Caspian Sea, Russia commands the whole, with the exception of the south shore, which belongs to Persia. The northern and eastern banks of the Caspian are the seats of the chief fisheries of the empire. On the north-west of Russia are the Baltic Sea, with the gulfs of Riga, Finland, and Bothnia; and in these waters the islands of Aland, Esel, and Dago belong to the empire. The freezing of the water near the shores of the Baltic renders the navigation of this sea impracticable during five months of the year, although a few ports are accessible throughout the whole year. Possessing means of easy communication with the most fertile governments of the interior, and sustaining chiefly the commerce of the Russian empire with the other parts of Europe and with America, the Baltic is of the highest commercial importance.

European Russia consists of a vast plain bordered with mountains. On the east are the Ural Mountains, forming a broad range of no great elevation, ending on the

north on the shores of the Arctic Ocean, and on the south in a range of elevated plains on the left bank of the Volga. On the south-east of the great plain is the lofty range of the Caucasus, crossed by the Pass of Derbend and the so-called Military Georgian Road. The Crimean Mountains, a continuation of the Caucasian chain, rise to 5000 feet in their highest summit. The districts in the south-west of Russia, between the Vistula and the Pruth, are covered by hilly ranges from the Carpathian Mountains, which in Poland are known as the Sandomir Mountains. The Finland Mountains, on the north-west, are ranges of granite rocks, embracing numerous lakes, and not rising higher than 600 feet. The Alaunsky table-land, which connects itself with the Ural Mountains by a chain of hills in latitude about  $62^{\circ}$  N., is the key to the configuration of European Russia. From this table-land, with an elevation of about 1200 feet, the country, with gradually declining slopes, falls away in four directions—north to the Arctic, north-west to the Baltic, south to the Black, and south-east to the Caspian Seas. The sloping country on the north of the Alaunsky heights is called, from its eastern and western limits, the Ural-Baltic table-land; that on the south of the same dividing heights is called, for the same reason, the Ural-Carpathian table-land. The Alaunsky heights form the great water-shed, and regulate the course of all the great rivers of the Russian empire. To the north they throw off the Petchora, the Northern Dwina, and the Onega; to the south, the Dniester, Bug, Dnieper, Don, and Kouban; to the south-east, the Volga, with its great affluents the Oka and Kama. The Western Dwina, the Niemen, and the Vistula fall into the Baltic Sea. At the foot of the north-west slope from the central terrace is the lake country of European Russia, and the great lakes are Ladoga, Onega, Ilmen, Peipus, and Pskov. The plain of European Russia naturally divides itself into three tracts or zones, each of which differs from the others in the nature and quality of its soil. The northern zone extends between the Arctic Ocean and the Ural-Baltic table-land, the middle zone between the Ural-Baltic and the Ural-Carpathian table-lands, and the southern zone between the Ural-Carpathian table-land and the Black and Caspian Seas. The soil of the northern zone is marshy and the climate inclement. In its middle part, between the rivers Onega and Mezen, and especially along the banks of the Northern Dwina, forests of fir-wood and large tracts of fodder-grass occur. Toward the east of this tract the woods disappear, and vast marshes, frozen the greater part of the year, cover the country. The middle zone reaches south-west to the government of Volhynia and the South of Poland, and north-east to the Ural Mountains. In the west it consists of an extensive hollow, covered with woods and with marshes, the chief of which are those of Pinsk. In the middle part of this zone the soil is partly heavy and covered with mould, and toward the north sandy. Beyond the Oka luxuriant meadows abound, and on the east, beyond the Volga, this tract forms an extensive valley, covered with a thick layer of mould, abounding in woods, and rising into hills in the vicinity of the Ural range. The southern zone consists of steppes extending along the shores of the Black and Caspian Seas. The steppes of the Black Sea have mostly a mouldy soil covered with grass, but in the south-east shifting sands and salt marshes predominate. The steppes of the Caspian consist of sand, salt marshes, and salt lakes, the Elton lake, yielding nearly 4,000,000 pouds (about 1,290,000 hundred weights) of salt annually, being the most remarkable.

Owing to its vast extent, the Russian empire presents great varieties of climate. At Archangel the mean temperature of the year is  $32^{\circ}$  Fahr.; at Yalta, in the Crimea,  $52^{\circ}$ ; and at Kutais, in the Caucasus,  $58^{\circ}$ . Consisting of an immense area of dry land, the climate of the empire is essentially continental, and the climate of localities in its interior is much more rigorous than that of places on the western shores of Europe in the same latitudes. The rigor of the climate of the empire increases not only with the latitude, but as you advance eastward; thus, the mean winter temperature of the town of Abo, on the Gulf of Bothnia, is the same as that

of Astrakhan, viz.,  $23^{\circ}$  Fahr., although the former is in lat.  $61^{\circ}$  and the other in lat.  $47^{\circ}$ , or  $14^{\circ}$  nearer the equator. The difference of the mean summer temperature under the same latitudes is, on the contrary, not very considerable. The isothermal line of Astrakhan ( $60^{\circ}$  Fahr.) passes through Lublin, in Poland, and Ekaterinoslav. In the east the maximum heat is even greater than in the west, and such heat-loving plants as the watermelon are grown more successfully in the south-east of Russia than in the west of Europe under the same latitude. The dryness of the atmosphere increases in the direction from north-west to south-east. On the banks of the Baltic the average number of rainy and snowy days is 150 and the annual rainfall is 20 inches, while near the Caspian the number of such days is 70 and the rainfall only 4 inches. The climate of Russia is in general healthy, but there are several places where diseases seem to be localized, as the shores of the Frozen Ocean, where scurvy is common, the marshes along the Niemen and Vistula, where the pica polonica is the chief disease, and the marshy lands on the Black, Azof, and Caspian Seas, where ague always prevails.

Russia is an eminently agricultural country, although only a comparatively small portion is under cultivation. In the central zone the soil is almost entirely black mould, extremely fertile, and hardly ever requiring manure. The system of husbandry most extensively practiced is what is called the "three-field system," in the working of which one-third of the land is always in fallow. In the south and south-east a system of agriculture peculiar in Russia is in operation; it is called the "fallow system," and consists in raising three or four consecutive crops from the same land, and afterward allowing it to lie fallow for five or six years, after which time it begins to grow feather-grass (*Stipa pennata*), which is considered a token of returning fertility. A great drawback to the development of agriculture is the want of proper means of communication, and consequently the low price of corn in the locality in which it is grown. Fodder-grass is rarely cultivated, as a sufficient supply of fodder is afforded by the extensive natural meadows. The chief cereals are wheat, which is grown as far north as lat.  $62^{\circ}$ , rye, barley, and oats. Buckwheat and millet are grown in the south, and from these, but specially from rye, the staple food of the inhabitants is made. Hemp and flax are extensively cultivated, and the oil extracted from the seeds of the former is an indispensable article of the peasant's household, as it is used for food during the fasts, which, taken together, extend over about half the year. Tobacco crops cover about 16,000 acres. Beet-root and maize are also cultivated, and there are numerous vineyards in the Crimea, Bessarabia, and along the Don. Gardening is an important branch of industry, the products being cucumbers, onions, cabbages, and other vegetables and fruits. An area of 486,000,000 acres is covered with woods, but the quantity of timber, from which material the peasant supplies almost all his wants, is at present suffering diminution. Coniferous trees are the chief in the northern districts, but in the central tracts oaks, limes, maples, and ashes are the chief. Timber is the chief article of internal commerce, and is floated down the rivers from the well-wooded districts to those which are destitute of wood.

**ANIMALS AND ANIMAL PRODUCTS.**—In the northern and central provinces cattle are kept chiefly for the purpose of obtaining manure, but in other parts cattle-breeding is an important branch of industry. On an average there are 30,000,000 head of cattle in Russia. Of horses the best, chiefly trotters, are reared in breeding-stables in the southern central governments, but the great bulk of the horses are obtained from the half-wild studs of the Cossacks, Kalmucks, and Kirghiz. The horses of Viatka, Kazan, and Finland are strong and hardy. The total number of the horses in Russia is about 18,000,000. Sheep-breeding is carried on extensively on the southern steppes. The sheep number 10,000,000, of which upward of 1,000,000 are of the fine merino breed. Besides these animals, there are camels in the south of Russia, reindeer in the north, and hogs and poultry in

great abundance everywhere. A breed of the urus—a huge and rare animal which does not occur in any other country—is preserved in a forest of the government of Grodno. Among the wild animals are (chiefly in the north) the bear, wolf, elk, fox, and marten; on the northern coasts are found the seal and walrus and the eider-duck and other wild-fowl. The more expensive kinds of furs are procured from Siberia.

The most important Russian fisheries are those of the Caspian and Black Seas and the Sea of Azof and their tributaries. The Baltic Sea is not remarkably rich in fish, but the produce of the adjoining lakes is much more considerable. The herrings, cod-fish, and salmon, caught in abundance in the White Sea, constitute the chief resources of the inhabitants of the adjoining districts. Bee-culture is very general in Russia. Silkworms are reared chiefly in the Caucasus.

During the year 1874, according to official returns, the state foundries smelted 1,225,000 Russian pounds\* of bronze, 557,000 pounds of iron, and 1000 pounds of steel; 89,000 pounds weight of articles in bronze were cast, and 508,000 pounds weight of ammunition, 9000 pounds weight of steel cannon and 15,000 pounds weight of iron cannon, besides which 15,000 pounds of lead and 6600 pounds of zinc were smelted. There were also made 7800 pounds weight of iron articles, 10,000 pounds sheet-iron, and 7500 roubles† worth of iron for use in shipbuilding, and 46,700 side-arms, 20,000 blades, and 5725 gun-barrels. The amount of metal passing through private factories is given approximately in the same official returns. They state the estimated products of the smelting establishments of the Ural at 13,200,000 pounds of bronze, 1,017,000 pounds of iron, 69,000 pounds of steel, and 100,000 pounds of copper. Those around Moscow are supposed to have produced 3,360,000 pounds of bronze and 1,830,000 pounds of iron. South Russian produce is estimated at 430,000 pounds of bronze and 440,000 pounds of iron; that of the Polish provinces at 1,370,000 pounds of bronze, 800,000 of iron, and 120,000 of zinc. Lastly, 44,000 pounds of copper is estimated as the return from the Caucasus. During 1874 gold to the amount of 1806 pounds was extracted, without reckoning the districts of Altai and Nerchinsk, which yield an annual average of 165 pounds. The total amount of coal raised in 1874 was 83,375,000 pounds. The extraction of mineral oils in the Caucasus shows a great increase, and oil-wells have lately been discovered in the government of Kielce, Poland. Small handicraft manufacturing establishments abound in all the central governments, especially in the neighborhood of Moscow, where whole villages during the winter season are employed in some special industry, as weaving, tanning, fur-dressing, joiners' work, shoemaking, etc. The chief manufacture is spinning and weaving flax and hemp. Linen is manufactured to the value of 100,000,000 roubles, chiefly in hand-looms, although the finer qualities are manufactured by power-looms, mostly in the governments of Jaroslav and Kostroma and the capitals. Hemp is manufactured into sailcloth and ropes, which articles are largely exported. Woolen and worsted stuffs are made to the value of 50,000,000 roubles, and the quantity is on the increase. Fine cloths and mixed fabrics are made in the capitals, and in the governments of Livonia and Tchernigov. Silk-spinning and weaving are carried on in the factories of Moscow, which is renowned for its brocades and gold and silver embroideries.

In 1870 there were 158 cotton-spinning mills, producing goods to the value of 53,350,000 roubles, and weaving establishments with an annual product of 13,000,000 roubles. The next most important branch of industry is tanning, the products of which amount to 20,000,000 roubles. Other important branches of industry are cutlery, pottery, and glass-works. The produce of the machine-factories in 1870 did not exceed 15,000,000 roubles; of the sugar-refineries 27,250,000 roubles; of the paper-mills 5,750,000 roubles.

The following table shows the imports and exports during the year 1873:

\* The *pud* or *pound* = 36 lbs. avoirdupois.

† One rouble = 77 cents, gold.



	IMPORTS ROUBLES.	EXPORTS. ROUBLES.
Baltic ports, . . . . .	232,900,000	140,494,000
White Sea ports, . . . . .	981,000	7,913,000
Southern Sea ports, . . . . .	61,070,000	89,343,000
Land frontier, . . . . .	117,524,000	108,108,000
Total, Europe, . . . . .	412,475,000	345,858,000
" Asia, . . . . .	20,958,000	9,757,000
	433,433,000	355,615,000

By far the largest portion of exports consisted of cereals.

The merchant navy of Russia consisted, at the end of the year 1874, of 2512 sea-going vessels, of an aggregate burden of 521,008 tons. Included in the total were 621 ships engaged in trading to foreign countries, and 1672 coasting-vessels, many of them belonging to Greeks, but sailing under the Russian flag. Not included in the return were 385 river and lake steamers.

The government of Russia is an unlimited monarchy, the head of which is the emperor, who unites in himself every authority and power—that is to say, is the head of the military, the legislative, and the judicial systems, and is also the ecclesiastical chief of the orthodox Greek Church. The order of succession is by primogeniture, hereditary in heirs-male, and in females in default of males. Every military or civil officer of the crown is required to take an oath of allegiance. The council of state is the highest branch of the executive, and comprehends the legislative, judicial, and administrative powers. The president and members—among whom are always included the ministers of the crown—are appointed by the emperor. A secretary of state, whose duty it is to report the opinion of the council to the emperor, is attached to this body. The estimates of expenditure and income, and every proposition introducing an addition to or a modification of the laws, are considered and revised by this council.

European Russia is divided into 50 provinces, over each of which is a governor appointed by the emperor. Some of these provinces, although administered by governors, are united under a governor-general. The governor-generalships are generally the remote frontier regions.

The nominal strength of the various divisions of the Russian army, according to the returns of the ministry of war, was as follows in 1874:

	PEACE FOOTING.	WAR FOOTING.
Regular army, . . . . .	457,872	808,670
Army of first reserve, . . . . .	180,740	127,923
Army of second reserve, . . . . .	207,812	276,664
Total, . . . . .	846,424	1,213,257

The navy comprised, in 1875, 223 vessels, of 188,120 tons burden, and carrying 561 guns. This included an iron-clad fleet of 29 vessels, of 9210 horse-power, 74,793 tons burden, and carrying 184 guns.

In the budget for 1875, the revenue is estimated at 559,361,193 roubles, and the expenditure at 556,105,410 roubles.

In 1875 the public debt was stated as 2,409,739,996 roubles, against which there was a credit, consisting of advances made to railway companies, etc., of 634,489,942 roubles.

The total length of railways at the end of the year 1874 was 13,227 English miles. Nearly one-half of the railway property was held by the government.

The post-office, in the year 1874, conveyed 59,529,000 letters, 1,300,000 post-cards, 2,218,000 wrappers, 1,493,000 parcels, and 29,020,000 newspapers. There were 3191 post-offices. The total receipts for the year 1874 did not cover the expenditure.

The length of telegraph lines, Jan. 1st, 1875, was 31,459 English miles, and the length of wires 58,675 miles. About five-sixths of the total belonged to the state. The total number of telegrams in 1874 was 3,512,003.

The following table shows, after official returns, the number of educational establishments in Russia, maintained either wholly or in part by the government, and placed under the Minister of Public Instruction, at the end of the year 1870:

	NUMBER.	PUPILS.
Universities, . . . . .	8	7,275
Lyceums, . . . . .	2	262
Veterinary schools, . . . . .	2	154
Gymnasias and progymnasias, { for males, . . . . . 153 } { for females, . . . . . 173 }		58,478
Training schools for teachers, . . . . .	39	1,274
District schools, . . . . .	419	27,508
Primary schools, . . . . .	22,827	831,402
Total, . . . . .	23,623	926,353

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 Romero, J., Liqueurs, 88s.  
 Romero, J. P., Cereals, 88f; Chestnuts, 88s.  
 Romero, M. C., Grapes, 88s; Wine, 88f.  
 Romero, R. E., Ropes, 88f.  
 Romero, R. G., Wine, 88s.  
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 plants only 2 tender plants & none  
 15 showing heavily infested + wood,  
 plants

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Feb. 15 "	5 " " "	
Mar. 15/100	1 "	
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